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Cleanings in Bee Culture

VOL. XXXVIII

OCTOBER 1, 1910

NO. 19

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Heads of Grain Our Homes

A New Bee-book!

WE ARE fortunate in securing from the publishers just at this season a new book on bee culture, entitled "How to Keep Bees for Profit." It covers a field quite new in that it gives information to beginner and experienced bee-keeper alike, and covers all conditions, for the man who keeps but a colony or two in his back yard, and the one who numbers his colonies by the hundred and has outyards. A list of the phases of the subject covered will give you an idea of the real value of the book. They are as follows:

Chapter	1	Bees, Fruit, Honey, and Money.
"	2	Physiology of the Honey-bee.
"	3	Races of Bees.
"	4	The Home of the Bees.
"	5	The Bee Family.
"	6	How to Start Bee-keeping; Hives and Tools; Transferring Bees.
"	7	How to Quiet and Handle Bees; How to Avoid Stings; Remedies.
"	8	Why Bees Swarm; How to Hive a Swarm; How to Control Swarming
"	9	Raising Queen Bees; How to Introduce a Queen.
"	10	How to Produce Comb Honey.
"	11	How to Produce Extracted Honey.
"	12	How to Make Increase.
"	13	Location of the Apiary; Out-apiaries; Moving Bees.
"	14	Diseases and Enemies of Bees.
"	15	Marketing the Honey-crop.
"	16	Beeswax; Its Uses; How to Render it.
"	17	Honey as a Food and Medicine.
"	18	Robber Bees; How to Prevent Robbing.
"	19	Feeding.
"	20	How to Winter Bees Successfully.
"	21	Sources of Honey

The book is so arranged that one may refer to the particular subject wanted without reading a lot of matter in which he has no immediate interest. The author is a practical bee-keeper, and writes in a simple manner which can not but be understood by the veriest novice, and is at the same time a convincing argument for the more advanced bee-keeper. The book contains 325 pages, and is fully illustrated by engravings which show details of the work at every step. No bee-keeper's library is complete without this book. Sold only in connection with a year's subscription to GLEANINGS IN BEE CULTURE. \$1.50 for the combination. If you are already a subscriber we will advance your subscription a year and send the book at once on receipt of the price. Get it NOW so that you may profit by its teachings this season.

THE A. I. ROOT CO., Medina, Ohio:

For the enclosed \$1.50 please send me at once one copy of HOW TO KEEP BEES FOR PROFIT, and enter my name for a year's subscription to GLEANINGS IN BEE CULTURE.

Name.....

Address.....

Town..... State

Gleanings in Bee Culture

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Editorial

REMEMBER that the National convention is to be held at Albany, N. Y., Oct. 12, 13. See announcement of railroad rates on page 20, advertising.

At this time of the year beginners in the North are often worried because some of their colonies have no brood or eggs. This is not an alarming condition, necessarily, for many queens gradually stop laying in the latter part of September or the early part of October.

OUR Canadian correspondent, Mr. Holtermann, mentions the fact that we made a flying trip through Canada, calling upon some few bee-keepers. We were making a motor trip; but, unfortunately, it rained or looked threatening the days that we were in Canada. As a consequence we hurried through, driving something over one hundred miles in the mud and rain, and were glad when we could get to a lake port and ship the machine to Cleveland. We saw only one bee-keeper in Ontario and that was our correspondent. We hope we may have the pleasure of visiting Canada some time in the future, when the weather is more favorable. As it was, our Canadian trip was cut short.

WEDDING BELLS.

WESLEY C. FOSTER, our Colorado correspondent, was married to Miss Cordia May Stevenson, Aug. 31, at Parkville, Mo. They will be at home Oct. 1 at 2113 Arapahoe Ave., Boulder, Col.

We are sure that our readers will all join us in their heartiest congratulations. Mr. Foster, while a comparatively new correspondent, has demonstrated that he is able to furnish excellent matter for his department. He seems to be in close touch with all Colorado bee matters, and, what is more, is a practical honey-producer himself.

THE MICHIGAN STATE CONVENTION.

MR. E. B. TYRRELL, the energetic secretary of the Michigan Bee-keepers' Association, is preparing an excellent program for the convention that is to be held at Grand Rapids, Mich., Nov. 9 and 10. Day sessions will be held in the Board of Trade rooms,

and night sessions at the Eagle Hotel, which will also be the headquarters of the convention, at a rate of \$1.50 per day.

The Michigan bee-keepers are some of the most progressive in the whole United States. They always have good conventions, and this meeting promises to be one of the very best. Some speakers from outside have promised to be present.

THE KENTUCKY BEE-KEEPERS SUCCEEDED, AFTER ALL, IN GETTING THEIR FOUL-BROOD LAW.

In our Aug. 1st issue we copied a clipping sent us by W. C. Furnas, to the effect that, owing to the omission of the enacting clause, the Kentucky law would not be effective. We are advised, however, by Mr. M. A. Aulick, M. D., one of those who were chiefly interested in pushing the law, that the law appears in the list "Acts of the Kentucky Legislature for 1909, '10." We quote as follows from Mr. Aulick's letter:

Our law has been in active effect since June 15, 1910. The statement was published broadcast over the State (I think by the glucose interests), that the bill would not become a law, owing to the omission of "be it enacted;" but this was followed by a statement by our Secretary of State that it would become a law. It is a matter of fact that these words were omitted, and I do not know how the matter was fixed up; but the law appears, among the rest in the list. "Acts of the Kentucky Legislature for 1909, '10."

Bradford, Ky.

M. A. AULICK, M. D.

HONEY CROP VERY LIGHT; BUYERS HOT AFTER HONEY.

As the season advances it becomes more and more evident that the general crop of honey throughout the United States has been a light one. Apparently it is even lighter than it was last year. A year ago we had a fair yield of Western honey; but in many sections of the great West, especially in California, the crop has been light, almost a failure in some localities. While there has been a splendid yield in some portions of the East, yet these areas seem to be somewhat limited. We know it to be a fact that the buyers are out hustling after honey as they never did before.

Now is the time to get good prices, and it is our opinion that, before much of the honey held in reserve is let loose, and there is not much, the figures will have to advance a little. In the meantime, bee-keepers who have honey should not make the mistake of holding too long. Better sell when buyers are hot after it than to wait until after the holidays, when prices always slump.

AN EFFORT TO PREVENT THE SPREAD OF DISEASE IN CALIFORNIA.

THE bee-keepers of Stanislaus Co., Cal., are not going to sleep on the question of fighting foul brood. To prevent indiscriminate shipping of possible foul-broody colonies, combs, etc., the following set of rules is sent out:

NOTICE OF SHIPPING, HAULING, OR RECEIVING BEES.

To all Railroad Station Agents, Shipping and Express Clerks, and Transfer Station Agents in Stanislaus County, California:

You are hereby notified to observe the following rules in forwarding and in receiving shipments of hives containing bees or empty hives containing combs, which rules are in accord with the statutes of California.

Any empty hives containing combs, or any hives containing bees, that are shipped or transported into this county from any place outside this county having an inspector of apiaries, must be accompanied by a certificate from said inspector, showing said bees and hives to be free from disease.

If no certificate accompanies said shipment, the same must not be delivered to the consignee until the inspector of Stanislaus Co. has been notified and has given release.

If a certificate as above accompanies said shipment, the same may be released; but notify the Stanislaus Co. Inspector of the consignment at once, together with name and address of the consignee.

If shipped from a place wherein there is no inspector, then notify me as last mentioned.

Absolutely receive no bees or empty hives for shipment or transportation to be sent from this county without a certificate signed by the inspector of this county, showing the bees and hives to be free from foul brood or other infectious or contagious diseases. A violation of the law in these matters is a misdemeanor, and the law must be complied with.

Ceres, Cal., May 24.

J. G. GILSTRAP,
Inspector of Apiaries for Stanislaus Co.

A CHEAP AND SERVICEABLE COMB-HONEY SHIPPING-CASE THAT DOES NOT COST A PENNY.

MR. H. F. HAGEN, of Reno, Nevada, has been using ordinary boxes in which 500 sections are packed for shipping comb honey. In other words, he has converted the ordinary section crates or boxes into shipping-cases. The length necessarily will be exactly right for four rows of sections when filled with honey. The depth may vary, but this can be made up by layers of straw or corrugated paper. The advantage, says Mr. Hagen, of this arrangement, is, that they cost absolutely nothing, and the cleat or framework at the ends of the boxes makes excellent handles for lifting the cases. They will never be laid on their sides because it will not be convenient to turn them over. When the two tiers of sections are not quite deep enough to fill out the case, straw can be used to make up for the rest of the space to very good advantage. Some straw should be put in the bottom of the box and some on top. When sections are packed in a container like this they are bound to go through in good order.

We doubt if very many people who buy sections have ever realized that the original boxes in which they come can be converted into excellent shipping-cases. Of course, some markets would not take them; but locally they could be used to very good advantage; and even for long distances, if the

consignee at the other end of the line knew he could buy the honey for a little less money, he would be willing to receive it in such containers. The only difficulty is that there will not be enough of these section-crates; but if they are saved, in two or three years they will go a long way.

OHIO'S EFFICIENT PURE-FOOD COMMISSIONER.

WE were very much gratified to receive the news a few weeks back that R. W. Dunlap, Ohio's efficient pure-food commissioner, was renominated for the third term. In Ohio politics, at least, it is very rare that a public official, no matter how capable he may be, holds more than two terms of office. But Commissioner Dunlap has done such good work that his party renominated him for the third time, and there is good reason to believe he will be re-elected. He has done so well that his name has been prominently mentioned as a possible successor to the present very efficient Secretary of Agriculture, Mr. Wilson, Washington, D. C., when he retires. Mr. Dunlap has the indorsement of a number of the best food commissioners of the various States; and a no less person than Dr. Harvey W. Wiley, the United States champion of pure food, has spoken very enthusiastically in his praise. He has done excellent work in enforcing law, and in getting on to the statute-books other laws that were urgently needed. He has improved the sanitary condition around our dairies; has compelled dealers to sell oysters instead of water and oysters; in fact, he has made the State of Ohio stand at the very front in the line of pure food and honest labeling. Mr. Dunlap has come to be a national figure in the line of pure food; and the people of Ohio will make a great mistake if they do not send him back to Columbus with a greatly increased majority.

SOUTHERN CALIFORNIA NOT A BEE-KEEPER'S PARADISE.

OUR California correspondent, Mrs. H. G. Acklin, remarks that a rumor has come to her that some of the bee-men of her State are afraid that there will be an influx of Eastern bee-keepers on account of our new California department. We do not think our friends of the Golden State need have any fear along this line. In the first place, we have repeatedly made the statement that the bee-keepers of Southern California, at least, have only about one good year in five, and a fair year perhaps every three years. The conditions are so very different and so uncertain that any bee-keeper in the East who has any locality at all would do better to stay where he is. What makes bee-keeping less profitable in California than in many sections of the irrigated regions is because of the uncertainty of the rainfall. After a good year on the coast it very often happens that there will be two years when there will be nothing doing, and lucky is

the bee-keeper if he can make enough money out of his bees during a good year to tide him over the bad seasons. The facts are, many thousands of colonies starve in the off years in California. This fact alone is evidence that the Eastern fellows had better think twice before they migrate into California. Of course, we admit that, when the Californians do have a good year, their average yield probably goes away beyond the average yield of many Eastern apiaries; but divide that yield by three and possibly five, and it is not so big.

EUROPEAN FOUL BROOD; CAN THE COMBS INFECTED BY THIS DISEASE BE RENDERED SAFE TO USE AGAIN? A SERIES OF TEN ARTICLES FROM S. D. HOUSE, A MAN WHO KNOWS THE ART OF PRODUCING NEARLY ALL FANCY COMB HONEY.

In a recent trip through the State of New York we called on Mr. S. D. House, of Camillus, and there learned that, although European foul brood is very prevalent in that vicinity, our friend has no disease of any kind among his bees. When asked for an explanation he said, "Mr. Root, the secret lies largely in having nothing but pure Italian bees of vigorous stock. While the yellow blood alone won't prevent infection from an apiary affected with this disease, yet when this race is used in connection with other preventive measures, it can be very easily kept out of a yard." Further inquiry revealed the fact that Mr. House uses either the Alexander treatment or the McEvoy; much depends upon circumstances. In some cases it is more practicable, he said, to use the Alexander. In speaking of this treatment Mr. House said Mr. Alexander probably did not know the great importance of having pure Italians. While he said that Italians were an element of the treatment, he probably did not appreciate the fact that there was more virtue in the race than there was in the dequeening part. Dequeening is important; but he went on to explain that one can practice either the Alexander or the McEvoy treatment, but ought to understand that it is necessary to have pure Italians of a vigorous strain.

We looked over a good many of his colonies, inspecting brood here and there. It was all clean and healthy. We also examined the apiary of one of his pupils, Mr. Irving Kenyon, who, a year or so ago, bought a yard of black bees that were rotten with European foul brood. Mr. F. A. Salisbury, of Syracuse, N. Y., in telling us of the circumstance, related that he told Kenyon that he had made a bad bargain; but Kenyon, he says, went to work requeening with fine Italian stock, using the House-Alexander treatment. The result was, he cleaned European foul brood out entirely, and that, too, *without destroying a comb*. In this connection Mr. House showed us one colony that had been rotten with the disease. It was a hive of blacks that he had bought.

He had expected to shake this on to foundation *a la* McEvoy. In the mean time he killed the old queen and put in a vigorous Italian. Circumstances prevented his shaking; and when he went to look at the hive again, lo and behold! the bees had nearly cleaned up the combs. "Now," said he, "I thought I would just let them go and see what they would do." A short time afterward they had cleaned it all out. We looked over the combs of the hive, and a motley lot they were; but there was not a trace of disease of any sort, and, mind you, *this colony had never been shaken*.

While Mr. House did not go so far as to say that requeening with Italian blood would cure *American* foul brood, he was most decidedly of the opinion that it was a very important element in any treatment, whether McEvoy or any shake-out plan that has ever been advocated. He then made the remarkable statement that European foul brood does not thrive readily except in a place where there are black bees or hybrids; that with any kind of intelligent management it can make no progress in a good Italian apiary. If Dr. Miller would get rid of his blacks and hybrids the Alexander treatment would produce results. European foul brood had no more terrors for him than the bee-moth.

When we told him that we were fearful that European foul brood might some day land at Medina, he very confidently asserted that we need have little fear so long as we kept a good strain of Italians and used reasonable precautions.

Mr. House went on to say that the Alexander treatment would not necessarily clean out all the disease the first year, even with Italians. Some little of it would show the next season; but, never mind, the Italians would clean it up if they are given a reasonable chance.

When asked as to whether he used the Alexander treatment exclusively, he said no. Sometimes it is more convenient and much more profitable to use the McEvoy. This he will explain in detail later.

Mr. House gave us a number of kinks of the trade; and before we left we engaged him to write a series of ten articles. While at his place we used our Graflex camera and took something like one hundred pictures, showing him in his various poses in handling bees.

He is certainly an *original* genius. He knows the production of both comb and extracted honey from A to Z. We are satisfied that these ten articles that he is to write for us will be some of the most valuable that we have ever given to our readers. When we consider the fact that they will be illustrated by a series of moving pictures, it will seem almost like visiting Mr. House in his yard. One can form some idea of the value of what he has to say when it is known that he produces some of the very finest comb honey that ever finds a market. It is nearly all "fancy." He has a number of tricks of the trade that he will explain.

Stray Straws

By DR. C. C. MILLER, Marengo, Ill.

WHITE CLOVER quit in July, and in September there is a second crop—don't know whether bees get much from it.

L. H. LINDEMUTH, page 597, my mother kept section honey in an attic, and the heat of the summer, or perhaps only fall, so ripened it that it kept perfectly through the winter without granulation or cracking of the comb.

A. I. ROOT, p. 578, you were not careless at all in your reading in the old version about Jesus eating honey. The second definition of "honeycomb" in the Standard is the comb and its contents; and in the Bible, honey-comb always means comb honey. Several times the sweetness of honey-comb is mentioned, and you know the empty comb is not sweet.

SOME TIME AGO Editor Hutchinson said he never scraped burr-combs off top-bars, and asked if any thing was gained by it. I don't know about extracting; but I know that, if they are left year after year, combs will finally be built between top-bars and sections, and, what's worse, honey will be there. I don't want the bottoms of sections muddled up in that way. [Same experience here.—ED.]

HAVE YOU laid up a store of sealed combs of honey for the bees next spring? It pays to do so. About two for each colony if you have eight-frame hives. Not so many, possibly, for larger hives. [We have for years made it a practice to lay aside nice sealed combs. These we hold in reserve, and give to colonies toward spring as they may need them. It is usually not practicable to feed liquid syrup in midwinter, nor even in cool weather in the spring.—ED.]

A BEE-LINE is popularly supposed to be the course always taken by a bee. According to the French investigator, Felix Plateau, as quoted in August *Deutsche Bzcht.*, this is by no means always true. If a bee finds a good foraging spot, no matter through how circuitous a route, it will continue to visit it, but always by the same circuitous route that it took on its first visit. [You are quite right. A bee-line is generally supposed to be a straight line. Very often bees strike out in a zigzag course. Whether this is due to air currents or what, we do not know.—ED.]

THIS QUESTION is handed me: "Is it best to allow the first honey to fill the brood-chamber?" No; better leave some room for brood. But I suppose the idea is: "Is it best to let the bees store what they will of the first honey for winter stores?" Generally such honey is of best quality for wintering, and it will be a safe thing to leave it in the brood-chamber. But a good queen

will have so much brood that in an eight-frame hive not half enough of the first honey can be left for winter, and the rest of the winter stores *must* be filled in later in the season.

Here's the situation: At the beginning of the harvest, more or less empty combs are in the hive, which the bees fill before filling the supers. Probably nothing is better *for the bees* than to leave them to their own devices. But *for the bee-keeper*, if he has a fall flow that is good for wintering, it is better to replace these empty combs in the spring with sealed combs of the dark honey he has saved from the previous year. It gives him just so much more light honey as surplus.

"A TABLESPOONFUL of glycerin to one gallon of honey will prevent it from granulating!" says the *Canadian Bee Journal*, page 229. [The pure-food inspectors in this State have determined that the use of glycerin in honey would be a violation of the pure-food law. Not long ago a dealer in Cleveland, Ohio, paid a fine for putting glycerin into his extracted honey. In defense he said he did not use it to cheapen the honey, because the article is far more expensive; but he did it to prevent granulation. The pure-food commissioner held that any foreign substance put into honey for any purpose whatever would be considered by his department as an adulterant, and he would proceed to apply the law to all persons who used it. It would be unwise to use it in any State. Incidentally we may say that we doubt very much whether glycerin will prevent granulation. Some tests we made in an experimental way showed that it had little or no effect.—ED.]

S. KING CLOVER, I'm with you about the width of hives, p. 585. I never could understand why a dummy was not as necessary in a ten-frame as in an eight-frame hive, and I wouldn't tolerate the latter without a dummy. [The reason the dummy was not put in the ten-frame hive was because when the eight-frame was widened out so as to take in a dummy there was very little demand for the ten-frame hive. It was expected that it would soon go out altogether. But gradually, and before the manufacturers knew it, there were as many ten-frame sold as eight-frame, and now some of them are wishing they could make the change without throwing every thing out of gear. If they were to make the change now, the new ten-frame hives would not fit those of older make. Supers and covers of the older type would be too narrow for the newer ones. Most of the factories probably concluded that the confusion would not counterbalance the slight advantage gained. Sometimes bee-keepers in the field do not understand that, however desirable a change may be, the manufacturer can not afford to give his customers stuff that will not match material bought at a previous date. Experience shows that it would make all kinds of trouble.—ED.]

Bee-keeping in Southern California

BY MRS. H. G. ACKLIN, GLENDORA, CAL.

If we are obliged to feed our bees this fall we are still ahead of our eastern brothers, as we do not have to "lug" them into winter quarters.

On a return trip to "Old Baldy" we came by a queer little apiary on a side hill. The hives were painted red, and the covers were roof-shaped. There was a honey-house, but no evidence of people being around.

I am credibly informed that an individual (do not disgrace manhood by styling him a man) not many miles from Los Angeles has for the last two or three years set out poisoned water purposely to kill bees. Have we no law to meet such a case?

In a paper read at our club meeting, Sept. 3, Mr. De Sellem spoke about a lady bee-keeper whom he met on one of his tours of inspection, and of the neatness of her apiary. A lady bee-keeper! that sounds good. I have not had the good fortune to visit one since I left Minnesota. Lady bee-keepers are not so scarce in the North Star State.

Doolittle's discussion, p. 581, Sept. 15, reminds me of a party here. Birds are numerous, and puncture the deciduous fruit before it is ripe. Bees soon find those broken places, and, unlike the birds, do not fly away when some one goes to the tree, and consequently get all the blame. How a sane person can claim that honey-bees do that damage is incomprehensible; but this person insists and says he knows bees are the culprits.

California bee-keepers are struggling with robbers in the same fashion, as nearly as I can make out, as are their brothers in Minnesota and adjoining States. Some of our bee-keepers are feeding back honey extracted earlier in the season; and I know from experience that feeding back honey is a very troublesome task. If your honey will bring the price of sugar, better feed sugar syrup, and robber bees will not be so plentiful. Bees always seem to detect the odor of honey, no matter what precautions are taken.

No honey, but disease among the bees has seemed to dishearten some bee-keepers to such an extent that they have neglected their apiaries, and the inspector has had some strenuous times in getting such yards cleaned up. Let us not be discouraged. Next year may be a banner season. Let

me suggest right here that there should always be a sort of good will or fraternal feeling among bee-keepers that would restrain any one of them from willfully harming another. Leaving fixtures from a diseased apiary exposed to other bees will, with a certainty, work harm to some other bee-keeper.

A rumor has come to me that some of our bee-men are afraid of an influx of eastern bee-keepers on account of this Southern California department. Never fear, dear friends; people all over the United States, and possibly across the briny deep, have known for some time that there is a Southern California, and also that a few bees are kept there. But, all joking aside, eastern bee-keepers know more of real California conditions than many of our own people; therefore a department in a bee-journal is not going to ruin our business here any more than departments from other States ruin theirs. On the contrary, this department should be the means of bringing about a closer union and a more friendly feeling among bee-keepers all over our land. Should one or two new ones happen to stray in, there are still vacant canyons among the higher mountain peaks, so let us put all selfishness aside and leave the lathstring out.

CLUB NOTES.

The Los Angeles Co. Bee-keepers' Club met in Chamber of Commerce, Los Angeles, Sept. 3. The convention was well attended, and an interesting and profitable time was enjoyed by those present.

The president and secretary were in their places, and after the usual business routine three papers were read by the following persons: Mrs. H. G. Acklin, "Wintering Bees in Minnesota and Adjoining States;" Mr. J. W. Ferree, Newhall, "Management of Bees;" Mr. Geo. B. De Sellem, Hollywood, "Field Notes."

Mr. De Sellem's paper was highly appreciated by the club members. While foul brood is still prevalent in many sections he takes an optimistic view of the situation, and commends bee-keepers for the way in which they have assisted him in his work; also for the good-natured way in which they have met this great honey-dearth.

Mr. A. B. Shaffner was made chairman of the press committee. The whole club constitutes the committee. Each one of us is expected to report to him on conditions in his own locality once a month. The object is to keep erroneous reports concerning the bee business out of the papers.

The legislative committee took up the question of spraying fruit-trees, thereby killing bees, and expect a similar committee in the State Association to co-operate with them in getting a law passed for the protection of bees.

Convention then adjourned to meet again the first Saturday in December.

Notes from Canada

By R. F. HOLTERMANN

ON THE WING.

A few Canadians had a flying visit from Mr. E. R. Root the first days in September. One of the places visited was Brantford. I am sure Mr. Root would be welcome for a much greater length of time during the honey harvest. If you should be spared until another year, Ernest, just try us.

THE NATIONAL CONVENTION.

The National to be held at Albany, Oct. 12 and 13, should be well attended. The officers have made up an inviting program. Our well-known Ontario friend, J. L. Byer, in dealing with the subject "Extracted Honey from Nectar to Market," will, no doubt, do credit to Ontario and Canada. Mr. Byer, with either voice or pen, can always interest. In my estimation it has always seemed to me unwise to say, "Come to the convention, and when you get there we will show you what the bill of fare is." The individual wants to be his own judge of what may be worth while to see and hear.

QUEENS ENTERING THEIR SECOND WINTER.

Referring to Dr. Miller's note, page 404, I am quite sure that in Canada not one bee-keeper in a hundred can be found who does not allow a queen to enter into her second winter. In my estimation such a system of having only young queens might be advantageous, but is it practical? Queens cost money or its equivalent. I make note of every colony that attempts to build queen-cells—especially those that do not appear to have sufficient provocation. The queens in these colonies are changed, and as many others as seems to me wise, and that I can readily provide queens for. Beyond this I have not gone. There may, however, be a better way.

PERCOLATOR FEEDERS.

In Samuel Simmins' article, p. 550, Sept. 1, it will be wise to note the following: "The lump sugar is raised or suspended in a perforated chamber, so that it can not clog nor settle in a mass on the main base of the feeder;" and, again, "Syrup-cans, as well as large cisterns, were adapted to the same principle; but where used as cisterns for reducing large quantities it is found an advantage to place the sugar in a bag within the metal strainer."

I tried the percolating method, using a tank with a capacity for 500 lbs. of honey. The sugar would settle in a mass on the bottom of the tank, preventing the liquid

from passing through the perforated bottom, and I gave it up. There are few so situated that they can not readily make syrup with hot water, and I doubt if I shall ever go back to the cold-water system. Besides, I want to use tartaric acid, and this necessitates bringing the syrup to a boil.

WEEDING IN.

When we bear in mind that those who destroy the poor and worthless, and retain and care for the good and useful in breeding are said to be weeding *out*, the term "weeding *in*" will be readily understood. This, then, is the season of the bee-keeper's year when many are laying the foundation for destroying their best colonies and retaining the inferior. Colonies which have been headed by prolific queens which have kept the brood-chamber well filled with maturing bees, and in which there is consequently comparatively little honey, are, of course, much more likely to die of starvation, unless specially fed, than those which have had less brood and more honey. Is such a policy wise? Some bee-keepers ought to have the society for the prevention of cruelty to animals after them. What is the difference between tying a cow in a stall until she starves to death, and keeping bees until *they* starve to death in the hive? For the one we have prosecutions; for the other, so far as I know, we have no punishment. Perhaps the members of the society mentioned are afraid to meddle with a bee-hive.

EXPERIENCE.

Here in Ontario, this year, the older bee-keepers are again hearing a good deal about how much money there is in bee-keeping, and how little capital and time bee-keeping takes. I say the *older* bee-keepers, for the younger generation have heard this now for the first time. In the earlier days these statements were combated vigorously at conventions and in the press, and probably the same will take place again. For my own part the truth will do no one an injustice. That honey in Canada will remain at the price it has for some years, I doubt; and if a bee-keeper is going to manage bees at the expense of but little time it can only be after he has put in a lot of time to gain the experience necessary to size up the situation as to the condition of the colony, the reasonable expectation from the honey-flow, etc. There have been in Ontario a great many disappointed embryo would-be bee-keepers who have nothing to show for their attempt but a depleted pocketbook, and perhaps a pile of empty hives. Put people on their guard; let them be shown the difficulties in bee-keeping; let them understand that it is a profession, and to succeed in it requires experience, thought, and time, and in the long run there will be more gained to the province, and the Department of Agriculture will not be discredited.

Bee-keeping Among The Rockies

By WESLEY FOSTER, Boulder, Colo.

The rosin (or wax) weed, as some call it, is very profuse this year, and is furnishing a good quantity of fall honey. In average years we dislike to see it bloom at all, for the honey is yellow, and strong in flavor, spoiling the flavor and color of our alfalfa honey. But this year, when we are hoping that the bees will get honey enough to winter, we are glad to see almost any kind of honey gathered by the bees. Some of our older bee-men aver that the honey from the rosin weed will candy while the bee is on the way from the flower to the hive; but the story is generally supposed to be taken with a grain of salt. Rosin-weed honey will candy almost as soon as stored in the cells, some years; this year, though, it does not seem to be giving us so much trouble.



COST OF HONEY PRODUCTION.

Mr. Pollock, page 552, Sept. 1, is not far off in his figures on the cost of honey production; but I think a good bee-keeper should be able to care for more than 200 colonies without hiring extra help except during the busy season. I know a number who have from 500 to 700 colonies, and hire a man during the summer if the crop warrants it. In these cases the cost of help is not over two or three hundred dollars. Perhaps the main reason so many bee-men can not care for more bees is because they lack a good system of manipulation. I think the only solution of the question is to keep more bees and get more for our honey by improving its quality and stimulating the use of honey among those who rarely eat it.



MOUNTAINS AND CLIMATE.

The cold shoulders of the Rockies push up into the sky from two to three miles, and the warm moisture-laden winds from the Pacific striking these granite walls form clouds which give up their moisture in the form of rain or snow. The irrigated valleys of the West nearly all lie close to the mountains, and it is often cloudy or partially so. Two or three times each summer the clouds envelop the mountains, pulling down the veil almost to the base of the foothills, the edge of the clouds forming a straight line along the slope of the mountains for miles. The weather turns cool—so cool, in fact, that heavy clothing is comfortable in July. These clouds may hang down close for several days; and when they do lift there is quite probably snow on the high peaks of the range. These days are not relished by the bee-keeper, for the bees can do nothing, and it is several days after the sun has again appeared before honey comes in good quantities. The honey crop of 1909 was cut in

half or more by a week of this cloudy weather coming in the first part of August.

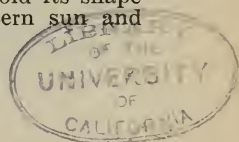
We can count on a cool spell by August 20, almost every year. The warm nights so necessary to secretion of nectar are at an end when this cold wave strikes us. The days take on a crispness which forces the fact home that fall is here; the alfalfa still blooms, but the bees do not work much on it. The sweet clover and rosin weed are visited much by the bees up into October; but new wax does not show up in the hives, and all the honey seems to find a place in comb that was built in the earlier part of the season when the summer was at its height. This August cold wave is usually so pronounced that we are more comfortable with a fire in the grate; but in a few days the weather warms up somewhat, though the crispness remains.

This season has treated us to a more radical change by giving us a change in temperature from 95 to freezing in one night. During the whole season we have been having extremes. In March, when snowy, slushy weather is our accustomed portion, we were having fruit-bloom; then a little later, when we generally get a whiff of summer breezes, we woke up on May 22 to find four inches of snow—not a very long period from snow the last of May to freezing weather, August 22; but then, even with all these eccentricities of the season the fruit and farm crops were not destroyed, though some of them had a hard time to make a creditable showing. Just this week, the first of September, we have had a beautiful sight, the whole range of mountains forming the continental divide blanketed in a glistening sheet of snow several inches deep. As I stood in the bee-yard to-day watching the bees hurrying to and from the alfalfa, sweet clover, rosin weed, etc., I could see the snow of the range, twenty-five miles away to the west.



RIPENING COMB HONEY.

Mr. Doolittle tells, in the August *American Bee Journal*, of the way the honey in unsealed cells around the edges of the sections leaks and runs out when the section is tipped over on the side. Now, our alfalfa honey will run out of the unsealed cells right after it has been stored; but after a very few days of our hot dry sunshine, the honey in these unsealed cells is thoroughly ripened. Our arid climate does the same thing for us that Mr. Doolittle secures by painting his shop with black paint to draw the heat, and by using a stove when the sun does not furnish the warmth. This thickening and ripening effect which our dry atmosphere has on our honey is one of the reasons for the ready sale which Western honey enjoys. Many a time have I seen a section of snow-white comb honey broken till it seemed there could not be a cell wall that was not shattered, and yet the honey was so thick that it would hold its shape for several hours. Our Western sun and aridity accomplish this result.



Conversations with Doolittle

At Borodino

PROLIFICNESS IN QUEENS.

"An old bee-keeper told me in the spring that he valued prolificness in queens above all other qualities. He wanted them so prolific that lots of brood would be reared at all seasons of the year when the weather would permit. In other words, he wanted the hive overflowing with bees spring, summer, and fall. Now I could not get my queens to come up to such a standard."

"Well, Mr. Smith, if this old bee-keeper had modified what he told you, and said that he valued the prolificness of a queen above all other qualities when it could be regulated so as to be of the greatest profit, I would hold up both hands for it. Here, where we have but about six weeks during the whole season in which the bees make any gain in honey, what we want is a queen which will fill the hive to overflowing with brood during a few weeks previous to this honey harvest, and lay just as few eggs at all other times as is consistent with accomplishing this object. If Mr. Smith had a piece of work that he had to finish by a certain time, if he intended to receive any profit therefrom he would hire his help before that time expired or not at all. If the help did not come until too late, surely he would not keep and board them six to eight months because it was not convenient for them to come sooner. He would tell them he did not want them, for it was too late. So I say, when any one says he wants the hives overflowing with bees in the fall there must be a mistake somewhere."

"But is there any race of bees that will give the required number of bees just when they are needed at the honey harvest?"

"Probably not, unconditionally; but with proper forethought the Italians come the nearest to it of any race so far brought to my knowledge. They are more susceptible to coaxing so as to have the hive overflowing with the bees at the right time than are the blacks or any of the other races from the Old World. Then what is of nearly as much value, as soon as the honey harvest arrives the queen will cease her extra prolificness, and thus we do not have a lot of hungry hands to board when they are of no use. At first I did not fully realize the possibilities in the Italian bees. But in the year 1884 I ran across something from the pen of O. O. Poppleton, now in Florida, but then in Iowa, which set me to thinking and experimenting more largely than I had done up to that time. Here is what he wrote, p. 50, 1884: 'I get very much the best results from my purest and lightest Italians. They seem to be much more disposed to stop brood-rearing partially and bend all their energies to honey-gathering, whenever there is a heavy flow of nectar, than any other

kind of bees I have tried, and this is a very great advantage.' And all of the years since then has proved that Mr. Poppleton knew what he was talking about."

"Then you consider this a trait of the golden Italians, do you?"

"I would not want to confine this matter to the goldens entirely. They may possibly be a little better along this line; but all Italian bees have this same propensity. If I were running for extracted honey I think there would not be difference enough along this line to pay for keeping the goldens unmixed from those termed dark or leather-colored. But for section honey, the goldens enter the supers more readily, and cap their honey much whiter than do the others."

"With the blacks, or German bees, which were the first ones to get a foothold in this country, there is little difference as to early prolificness of the queen. But the trouble with them is that they will continue to breed during the honey-flow with little or no slack; hence we have an extra lot of consumers after the honey season is over—enough so that often there are not enough stores left for wintering without feeding. But with the Holy Lands, Syrians, Cyprians, Carniolans, etc., none of them seem to care to go to brood-rearing to the maximum extent until the harvest arrives. Then, instead of bending every energy toward the storing of honey, they go to brood-rearing with a vengeance, oftentimes resulting in the consumption of the larger part of the nectar gathered during the harvest, with the maximum number of bees on the stage of action when the harvest is closing, this great hoard having to obtain their support from whatever was accumulated during the harvest. In over half of the years during which I tried my best to accomplish something with them worth while, there would be very little surplus fit for market, and the hive nearly empty for winter. The Italians, during these same years, furnished stores for these other races, with frames of sealed honey which they could spare in September, and gave quite a fair crop of section honey."

"Tell me about the management necessary for the queen to be most prolific just a few weeks before the honey harvest."

"I used to feed, spread the brood, etc., as recommended in the bee-papers of a quarter of a century ago; but now all I do is to know that each colony has sufficient honey so they feel no need for retrenchment during any time of scarcity which may occur from early spring till the honey harvest."

"And do you find that this answers as well as feeding and spreading brood?"

"Equally well if given as advocated in the serial* published in GLEANINGS of a few years ago. There is nothing better by way of encouragement of rapid brood-rearing prior to the main honey-harvest than for the bees to realize having '*millions of honey at our house.*'"

*A Year's Work in an Out-apiary. In book form, paper cover, 50 cts. New edition just off the press. For sale by the publishers of this journal.

General Correspondence

THE CONDITIONS NECESSARY FOR SECURING HEATHER HONEY IN GREAT BRITAIN.

BY D. M. M'DONALD.

At the first glance it might appear that the treatment of heather honey might be inappropriate for the pages of GLEANINGS, as I believe it is not found in America. When, however, it is viewed simply as a late autumn source of nectar, a "fall" flow, in fact, the appositeness becomes patent. For working any late flow, crowded colonies, doing quick and expeditious work, are of the greatest importance. It is not always within the reach of the bee-keeper to be sure that all his stocks shall be strong, and ready for good work in supers for early fruit bloom, or even for clover in unfavorable seasons; but when working for a late flow such as the heather he has the matter to a great extent in his own hands. These colonies being obtained just when the early days of August show the hillsides one radiant display of purple bloom, consisting as they do mainly of young energetic bees, eager for work and ready to improve each shining hour, can be relied on to do the very best of work, both as to amount and finish. If the queens are young and prolific, occupying almost every spare cell in a restricted brood-nest, the sections, if warmly wrapped up, will be rapidly filled and sealed. In such circumstances they will all be found heavy, well finished, and generally able to be graded first class. It must be fully understood that these powerful colonies are a *sine qua non* if full success is to be counted on in working this late flow.

SECURING STRONG COLONIES.

We can do this in at least one or the other of three ways: 1. By doubling early in the season and allowing the queen and bees the range of the twenty frames in the two tiers, we can count on an enormous number of bees peopling that hive in early August. But some three weeks before the opening of the heather flow the queen is confined to the ten lowest frames selected as those containing the least brood. The other ten are left on above until all the bees have hatched out in about three weeks after the former change, when they are carried away *en bloc* and their places taken up with additional section-racks. Three of these are often necessary; and if some of them are filled with partly finished sections from an earlier flow, very rapid work is done—so much so that results would astonish bee-keepers accustomed to medium colonies. Care must be taken that the second body box is not withdrawn at too early a date, as then a congestion would arise, causing swarming even at this late period. Such colonies with good weather and a rich heather bloom may be

relied on to roll in the honey at a rapid rate; and the brood-frames being occupied it must go upstairs where the apiarist desires it.

2. We find, of course, that a powerful colony, in spite of all the care and attention which can be given it, will at times persist in swarming, accept the swarm, and, while it is out, shift its body box on to a new site adjoining, and place a new set of frames on the old stand. Return the swarm, which, with the flying bees, will make a strong stock; but don't rely even on this powerful body of bees. In about eight days carry the old body box, all this time lying alongside the new colony, when the whole of its flying bees will be added to the already large army of workers. If this operation is carried out just before the heather flow we are certain to have a force of bees fit for the best work in surplus chambers. As our swarmed queen has by this time almost every inch of comb in the breeding area occupied by eggs and brood, all surplus must perforce go into the supers. In this way we secure the very finest work in section-building; for a swarm, as is well known, works with an energy all its own, while its combs are generally cleaner and finer in finish.

3. We may, in the early days of August, manipulate our hives in such a way that a certain number will have every frame a mass of just hatching bees by the middle of the month, all prepared to work at high pressure. This strengthening of all hives worked for heather honey at home, or transported to the moors, should be carried out to the extent that not only will the lower body combs be a solid mass of brood, but the hives should also be boiling over with bees. Every nook and corner of the brood area and also the surplus chambers should be densely crowded with workers. This gives an ideal force which yields a regular succession of young bees to replace others when they are worn out, as all the combs carried to the heather hills are simply hatcheries, being packed with sealed brood in all stages of development toward the perfect worker. Such colonies will toil most assiduously, and carry on their indefatigable labors early and late with a fixed determination to fill every vacant cell. Some short-sighted opportunists would feed syrup before going to the moors, with the idea that they may thus force the bees to store aloft. The theory sounds plausible; but on analysis it proves thoroughly unsound, because they thus block the queen. If theory demands that the cells of brood-frames be full, then let them contain only eggs, larvæ, and just hatching bees, which will soon emerge to take the place of those worn out by the strenuous life lived by bees at the heather, working on exposed moors.

ADING THE BEES.

The apiarist should aid his bees at all times in every way he can; but particularly during a late flow every little kindness tells by adding to the bees' comfort and bringing a rich reward. He must watch the flow and arrange the interior of the hive to se-

cure the largest profits. He should be liberal in the use of super foundation, nothing less than full sheets being permissible. It is inadvisable to give too many frames to these stocks wrought at high pressure for this late flow. My preference would be nine frames. Sections must be kept very warm because the nights begin to chill, and at as early a date as possible finished crates should be withdrawn gradually until toward the close of the flow only one is left. Bees of a good capping strain are best for the heather, and almost all heather men swear by the blacks. In excessive heat, be liberal with the amount of ventilation, but don't overdo it. A large entrance is at all times desirable. Such a force of bees requires ample scope for exit and entrance in order that there should be no crowding or impeding of the diligent toilers.

PACKING AND TRANSPORTING.

Special heather hives are turned out by several appliance-dealers, admirably arranged for ease and speed in packing. They are supplied with means for ample ventilation, and are provided with an arrangement for carrying supers in position. A few screws driven home is about all the packing required. Any common hive, however, can be arranged in such a way that there is little fear of a breakdown in transit. The question of transporting hives to the heather has been reduced to a fine art in many parts of Scotland and the north of England. Many apiarists carry them thirty or forty miles to the foraging grounds in all sorts and conditions of vehicles, from a small hand barrow to the huge lorry carrying a heavy load. The journey is generally undertaken at night, and the bees liberated at early dawn. When the distance to the moors is more considerable, bees are sent by rail; and now even motor cars are utilized for this purpose. Some cozy sheltered nook is selected on dry porous soil, with a slope coming gently down from the foraging-grounds, so that bees heavily laden will have their homeward journey down hill. A southerly exposure is preferred, as on such reaches the sun's rays ripen and expand the heather bloom more fully. It is a glorious sight to see those heather hills at their best, with their illimitable stretches of purple hue stretching leagues and leagues on every side, scented like a honey-comb. These bees work as I think they can do nowhere else—at least in this country.

HEATHER HONEY.

The product of *Callega vulgaris* is of a rich amber color, bright and sparkling, rather than dull and shady. It has a strong pronounced flavor, delicious to the palate when one has acquired a liking for it. The aroma is pungent and penetrating, making itself manifest in a room where heather honey is kept in a closed cupboard. Its consistency is so remarkable that it will not leave the comb by any amount of centrifugal force used in the extractor, and, when desired in the liquid form, the combs have to

be pressed by heavy screw power in a specially constructed press. Most bee-keepers in heather districts, therefore, work for sections only; but it pays well to press all defective combs preserved for the purpose, and thus renew the works of the brood area periodically. On account of the profusion of the bloom the flow is at times extraordinarily abundant; but as the lateness of the season frequently causes unfavorable weather conditions the crop is an uncertain one.

Heather honey sells at about double the price obtained for any other kind in this country. While a great part of the flower, clover, and lime honey in sections brings the apiarist only 18 cents per lb., heather frequently fetches him 36 cents. While, too, the other kinds drag on the market, heather honey sells readily, and is often disposed of before it comes off the hives. Retail prices in Edinburgh and London warehouses are often as high as 48 to 60 cts. per section!

Banff, Scotland.

FOUL-BROOD LEGISLATION.

The Foul-brood Laws in the United States Criticised; Permitting Bees to be Kept in Box Hives Prevents the Eradication of Disease.

BY I. HOPKINS,

Late Chief Government Apiarist of New Zealand.

Allow me to congratulate you on securing a foul-brood act for Ohio. You say in your issue of June 15 that "In the opinion of some of the best experts in the country it is one of the best measures that was ever enacted." If this is meant to apply to similar acts already in force in the United States only, then I have nothing to say against the experts' opinion; but if meant to embrace all acts of the kind, then I differ with them.

The Ohio act, as given in your issue of March 15, has the cardinal weakness of all your other acts, and, therefore, for efficiency in controlling disease I can not see that it is one whit better than the others. That weakness is, in not enforcing the use of frame hives only as domiciles for bees. The chief obstacle to the efficient control of disease has been and always will be the ignorant and careless bee-keepers. These are the men who keep their bees in bee-gums, packing-boxes, skeps, etc., with immovable combs, and I maintain that any one keeping bees who does not get beyond this stage is a positive drawback and a danger to the industry.

For fully 25 years the bee keeping industry in New Zealand was kept back through foul brood, which was rampant all over the dominion. The spreading and propagation of disease was entirely due to the ignorant and wilfully careless box-hive bee-keepers. Knowing this so well, when I had the honor of drafting our "Apiaries Act" I made the compulsory use of movable-comb hives the paramount section of it. The effect of this

provision has been to drive out of the business automatically the great majority of the ignorant and careless, leaving only the frame-hive men to deal with.

Presumably, the man who adopts up-to-date bee-appliances is the one who will do his best to keep his bees clean. That is how we find it; and since doing away with the box-hive man we have been able to clean whole districts that were previously rotten with disease. I would ask, how is it possible for inspectors to do efficient work where there are fixed combs in boxes? Some must be cut out to be examined, and in this act they are compelled to do the very thing which will spread disease, to say nothing about the enormous amount of time required to examine thoroughly a box-hive apiary, as compared with one of movable-frame hives.

Our impression here is, that, with all your acts and inspectors in the different States, you are not making much headway, if any, against disease; and this impression is made through the reports that appear from time to time in your own bee literature. Do away with all but movable-frame hives, then you will do away with the root cause of most of the trouble in controlling disease.

I hope, Mr. Editor, you will take my criticism in good part, for believe me I mean well, and recognize the assistance I have received, in my own progress, from American bee literature.

Here is a copy of a digest of our Apiaries Act.

Auckland, New Zealand.

THE APIARIES ACT.

The following is a digest of the Apiaries Act which came into force September 14, 1907:

INTERPRETATION.

2. In this Act, if not inconsistent with the context, "Apiary" means any place where bees are kept.

"Bee-keeper" means any person who keeps bees or allows the same to be kept upon any land occupied by him.

"Disease" means foul brood (*Bacillus alvei* and *Bacillus larvæ*), bee-moths (*Galleria mellonella* and *Achraea griseola*), and any other diseases or pests from time to time declared by the Governor in Council to be diseases within the meaning of this Act.

"Frame hive" means a hive containing movable frames in which the combs are built, and which may be readily removed from the hive for examination.

"Inspector" means any person appointed by the Governor as an Inspector under this Act.

BEE-KEEPER TO GIVE NOTICE OF DISEASE.

3. Every bee-keeper in whose apiary any disease appears shall, within seven days after first becoming aware of its presence, send written notice thereof to the Secretary for Agriculture, at Wellington, or to any Inspector of Stock.

POWERS OF INSPECTORS.

5. Any Inspector may enter upon any premises or buildings for the purpose of examining any bees, hives, or bee appliances; and if the same are found to be infected with disease he shall direct the bee-keeper to take forthwith such measures as may be necessary to cure the disease; or if, in the opinion of the Inspector, the disease is too fully developed to be cured, he may direct the bee-keeper within a specified time to destroy by fire the bees, hives, and appliances so infected, or such portions thereof as the Inspector deems necessary.

REMOVAL OF BEES TO NEW HIVES.

6. In any case in which it is found by an Inspector that the bee-combs in any hive can not, without

cutting, be separately and readily removed from the hive for examination, he may direct the bee-keeper to transfer the bees to a new frame hive within a specified time.

INSPECTOR'S DIRECTIONS TO BE OBEYED.

7. (1) Every direction by an Inspector shall be in writing under his hand, and shall be either delivered to the bee-keeper personally or sent to him by registered letter addressed to him at his last-known place of abode.

(2) Every such direction shall be faithfully complied with by the bee-keeper to whom it is addressed, and, in default of compliance within the time specified, the Inspector may, within one month, destroy or cause to be destroyed by fire, at the expense of the bee-keeper, any bees, hives, and appliances found to be infected with disease.

INFECTED BEES, ETC., NOT TO BE KEPT OR SOLD.

8. No bee-keeper shall—

(a) Keep or allow to be kept upon any land occupied by him any bees, bee-combs, hives, or appliances known by him to be infected by disease without immediately taking the proper steps to cure the disease; or

(b) Sell, barter, or give away any bees or appliances from an apiary known by him to be infected by disease.

FRAME HIVES TO BE USED.

9. No bee-keeper shall, after the expiry of six months from the passing of this Act, keep, or knowingly allow to be kept on any land occupied by him, any bees except in a properly constructed frame hive.

OFFENSES.

10. Every person is liable to a fine not exceeding five pounds who—

(a) Obstructs an Inspector in the exercise of his duties under this Act, or refuses to destroy or to permit the destruction of infected bees or appliances;

(b) Fails to comply with any direction given under the provisions of this Act by any Inspector;

(c) Commits any other breach of this Act.

THE VALUE OF BEE AND HONEY EXHIBITIONS TO THE BEE-KEEPING FRATERNITY.

BY ADOLPH LOEHR.

We have annually at Madison Square Garden (the colosseum of New York) a series of trade exhibitions and shows where men of various callings gather, either to sell or advertise their wares or to gain a knowledge of the newest productions and general progress of their particular line of business, and in some instances to place orders. The general public is always well represented, because, to the casual observer, these exhibitions are very educating. The annual house-furnishing show is one of these exhibitions. When the writer learned from a daily paper that bees were going to play a part in the coming show he wondered of what interest they might be in furnishing a home, and attended the show to find out.

After passing by the various booths of the house-furnishers, where many new and interesting specialties were shown, we were attracted by a great crowd gathered about a large cage listening to a "demonstrator" inside the cage. At first we could not hear what this gentleman was saying, because a band of young musicians were evidently trying to prove their capability of filling every cubic inch in the great hall with the blasts from their lungs. By an occasional peek through the depths of the millinery on

the exaggerated head-gear of the lady standing in front of us we chanced to make out the form of a stately man in white uniform, apparently in the service of Uncle Sam's army. This proved to be Capt. Wm. A. Selser, of Company B, First Pennsylvania Honey Guards; and evidently Capt. Selser has great confidence in his army, for he explained that he had enough bees with him to kill every one before him. Don't be alarmed. He was merely revealing some of the secret defenses of his army and their great power over foreign intruders. He showed us how harmless his soldiers are toward their friends by having them push numerous stings into his arm. He afterward placed these stings on a sheet of white paper and handed them to his assistant, who showed them under a microscope.

Mr. Selser gave an exceedingly interesting lecture, not in great technical terms, but in a simple manner, so that any one listening could understand him. He told us what a wonderful work the Lord had accomplished in the bee; how intelligently they work, and what an object-lesson they ought to be to us by the way they govern their communities. He gave a detailed explanation of their workings, and explained the functions and person of the queen. He concluded his talk by entering into the commercial part of the business, indirectly urging people to buy honey and keep bees, and, in general, by arousing enthusiasm in our industry. Thanks to Mr. Selser for his endeavors in the missionary field. The points he drove home in my mind are three: First, that the bee is one of the everlasting testimonies of the greatness of our Lord and his love toward man; second, the necessity of bees and honey in every community; third, the fact that honey is an essential in house-keeping. From my talk with several listeners I feel that Mr. Selser's work will bring fruit.

After the talk, all hands in charge were kept busy answering questions and giving descriptions regarding the various implements exhibited. General enthusiasm prevailed, and for the time bees were the center of attraction of the whole show. This showed me the importance and good work of exhibitions, which ought to be supported by all real bee-keepers. Any business man will agree that advertising pays, and here is where we all get the benefit of the efforts of those who exhibit. They advertise honey and bees in a general way. When a purchaser enters a store and asks for honey the chances are that he or she will not ask for Root's honey or Brown's honey, but for pure honey put up in a presentable condition. She has been taught that Root's bees can not produce better honey than Brown's nor Brown's better than Root's. If Brown or Root is careless in preparing and marketing his honey it will be a case of the survival of the fittest. At any rate, a demand for a good product has been created whereby the tumbledown lazy element will be eliminated, and the progressive, industrious fellow

elevated. What better can happen to bee-keepers?

Whitestone, L. I., August 27.

THE SWARMING TENDENCY ELIMINATED.

But this Year Every Colony Swarmed and Swarmed.

BY J. C. BALCH.

I have been trying for eight years to eliminate the swarming instinct in my apiary, and thought I had it down about right—only three natural swarms in eight years. Last year, instead of honey we had honeydew (black strap), and nearly all the bees in the country died. A neighbor lost 29 out of 30 colonies, all run for comb honey. I lost 10 out of 27; and of the 17 left, there were only 5 that were in good shape the first of May. Then we had a scourge of caterpillars the year before, and the orchards were full of eggs of the tent caterpillar, and they began to hatch the last of April and first of May, and every fruit-grower sprayed with arsenate of lead, Paris green, etc., without regard to bees, apple-blossoms, or any thing else. The consequence was, a half or more of the flying bees were killed. I did not lose any hives or colonies, but they were kept back so that they did not get to breeding well till about the 10th of June. Then they began to swarm with but little honey in the hives (I had put on my extracting-supers and they had filled them with brood). I was surprised. I thought the bees were crazy, and they *were* crazy to swarm; but I hived the swarms on the combs that the bees had died on in the winter with diarrhea, and began to cut out queen-cells, all but one, in the hives that had swarmed, and they went to work and built more right away, while there were eggs in the hive, and in ten days they would swarm again. I could not explain that at first, but they swarmed all through the honey-flow, during which time I never saw honey come in so fast in my life. I had the best colonies built up three stories high with queen-excluder over the brood-chamber after the first of July, and I extracted every ten days. The two top stories were filled and sealed solid from top to bottom. I got from 17 colonies, spring count, over 1800 lbs. of the thickest and best white-clover and alsike honey I ever saw. I saved 24 swarms; but quite a number went to parts unknown. I cut out queen-cells all summer.

I have come to the conclusion that, if the weather and the season and the honey-flow are right, bees will swarm, for they were made so; and while I prefer to control the swarming habit as much as I can, when it comes a year like this they just go wild and do pretty much as they please if the boss is not in the yard with them all the time. I had a fruit-farm to look after, so I could not live with them.

Ferndale, Wash., Sept. 1.



SUMMER EVERGREEN PLANTED ON THE SOUTH SIDE OF EACH HIVE FOR SHADE. In a few weeks' time this bush, otherwise known as the "burning bush," furnishes good shade.

SLIDING HIVES INTO A CELLAR.

A Quick-growing Bush for Shade in an Apiary.

BY GRACE E. BICKNELL.

Mr. Geo. Bicknell (my grandfather) started in the bee business sixty-two years ago near Buffalo, N. Y., while not yet sixteen years of age. He and a neighbor boy bought a colony for \$3.00—their entire fortune—and carried it home through the woods, done up in a sheet that was slung across their shoulders. The other boy soon tired of the bees, so grandpa traded him a sheep for his share. He kept these bees one year and then sold them for \$25.00, there being five colonies in all by that time.

His next venture in the business was the following spring when he was fortunate enough to capture a swarm, and from that time on he has never been without bees. He keeps them simply for the pleasure they afford him. He has now forty colonies of Italians, mostly of his own raising. In all the years he has been engaged in the bee business he has never worn a veil nor a pair of gloves.

Last winter the colonies were wintered in a cellar, and only one died out of thirty, while other bee-keepers near by lost a large number. Although 78 years of age, grandpa manages to get his hives up and down the cellar-steps without assistance. He uses a sled on to which he can easily slide the hive, so that he can pull it to the outside cellar-steps. At this point he sets the sled on a slide made to fit the runners so that it is almost impossible for any hive to tip

over. In this manner the hives are gently slid to the cellar floor and then placed where they are to stand through the winter. In



MR. GEO. BICKNELL, OSBORNE, KAN., WHO HAS BEEN A BEE-KEEPER 62 YEARS.



FIG. 1.—LAKE IN BOULDER CANYON, COL., HELD BACK BY THE IMMENSE CONCRETE DAM.

This volume of water not only furnishes 21,000 horse power, but supplies water for irrigating 12,000 acres of land.

the spring they are pulled up the steps in the same manner.

The hives in the apiary face the east; and as there is no room for trees a bush known as summer evergreen, or the burning bush, is planted at the south side of each hive to protect the bees from the sun. This is very pretty, and furnishes a splendid shade within a few weeks.

Osborne, Kan.

PROSPECTS FOR IRRIGATION IN COLORADO.

How Irrigating-reservoirs and Power-plants are Combined.

BY WESLEY FOSTER.

For a number of years government engineers as well as engineers for private companies have been working on the problem of using the water of the Rocky Mountain streams for power in generating electricity and at the same time save the water for irrigation. If the reservoirs are built out in the valleys and on the plains, the power is lost unless the generating-plant is an entirely separate affair. This makes the expense much greater than if the reservoir is built high up in the mountains and the water piped down a thousand feet or more to the immense turbines or water-wheels which turn the electric generators, and then carried in ditches out to the land to be irrigated in the valley.

It is necessary for a power-plant to have a steady and constant supply of water throughout the year, and for this reason immense storage reservoirs are needed. Fig. 1 shows an immense concrete dam 18 miles up Boulder Canyon, built across the canyon at a narrow place. About 525 million cubic feet of water is impounded, or, in other words, 12,000 acre feet, which means enough to cover 12,000 acres of land with one foot of water. An acre of land requires about an acre foot to raise a crop successfully, so that this dam holds back water enough to irrigate 12,000 acres. But the water for irrigation is not needed during the fall, winter, and spring, although it is needed for power continuously, so the power company is building a large reservoir out on the plains, several miles from Boulder, to hold the water that must be used during the months when no irrigating is being done. This makes a very economical plan, and, when in full operation, the water will be saved for irrigating, and all the power from this fall utilized.

The dam above referred to is now like a great boulder or rock concrete, 177 ft. high, 624 feet long, 120 feet thick at the bottom, and 16 feet thick at the top. About 133,000 cubic yards of concrete were required, and many months' time elapsed during its construction. It is like a great rock wedge placed in a wedge-shaped canyon, and it so effectually stops the water that it makes a lake more than a mile long and about half a mile wide.

Fig. 2 hardly conveys an idea of the immensity of the affair. It might be likened to the pyramids of Egypt, but it will infi-

nity surpass them in usefulness, for it will water a thousand gardens and farms, and will furnish light and power to dispel the darkness and drudgery of farm and country life.

The water that is held in this upper reservoir, together with the one now being built out on the plain, will hold water enough for twenty-five or thirty thousand acres of land.

A concrete conduit, 3 feet in diameter and 12 miles long, carries the water from the upper reservoir down to a small regulating reservoir, almost overlooking the power station 1900 feet below. From this small regulating reservoir the water is carried in a steel pipe 56 inches in diameter at the top and 44 inches at the bottom to the power-wheels 1845 feet below. This pipe is $1\frac{3}{4}$ inches thick at the bottom and $\frac{1}{4}$ inch thick at the top. The water pressure is 900 pounds to the square inch, and the water strikes the buckets of the impulse wheels going at the rate of four miles a minute. About 21,000 horse power can be generated by this stream of water when running at full capacity. Some idea may be gained of the value of our mountain streams when it is remembered that this power-plant does not take all the available power in Boulder Creek; and among the Rocky Mountains there are thousands of streams with more available power than this one.

Boulder, Col.

A LAYING QUEEN UNDER THE BOTTOM-BOARD.

A Peculiar Case of Bees Refusing to Accept a New Queen.

BY DR. S. P. SCHROEDER.

Mr. F. L. Dickerson, of Bakersfield, Cal., had a colony of bees that persistently killed its queens, p. 564, Sept. 1. I had a similar experience two years ago. The colony had foul brood, but was of medium strength, so the 27th of May, 1908, I made an artificial swarm by shaking the bees in an empty hive in which I had placed but very narrow starters. I examined the colony in five days. The bees had built comb about four inches wide in the six central frames; but one-third, at least, if not more, was drone comb. I did not find the queen, but thought nothing of it, as the comb was so soft that a thorough examination was impossible. Ten days after the swarming I examined again, and I found no young brood nor eggs, nor the queen. I concluded that the queen got killed during the shaking process; and as I had several nuclei with young laying queens I gave this shaken colony one, and the bees ate her out in two days, only to ball and kill her immediately. I gave them another laying queen and waited four days before I liberated her, after first thoroughly smoking the colony. That queen also lay



FIG. 2.—LOWER VIEW OF THE GIGANTIC CONCRETE DAM WHICH HOLDS BACK 525 MILLION CUBIC FEET OF WATER IN BOULDER CANYON, COL.

The illustration fails to convey a true impression of the scene. Instead of being a lake of water, the white portion of the picture is really the side of the dam.

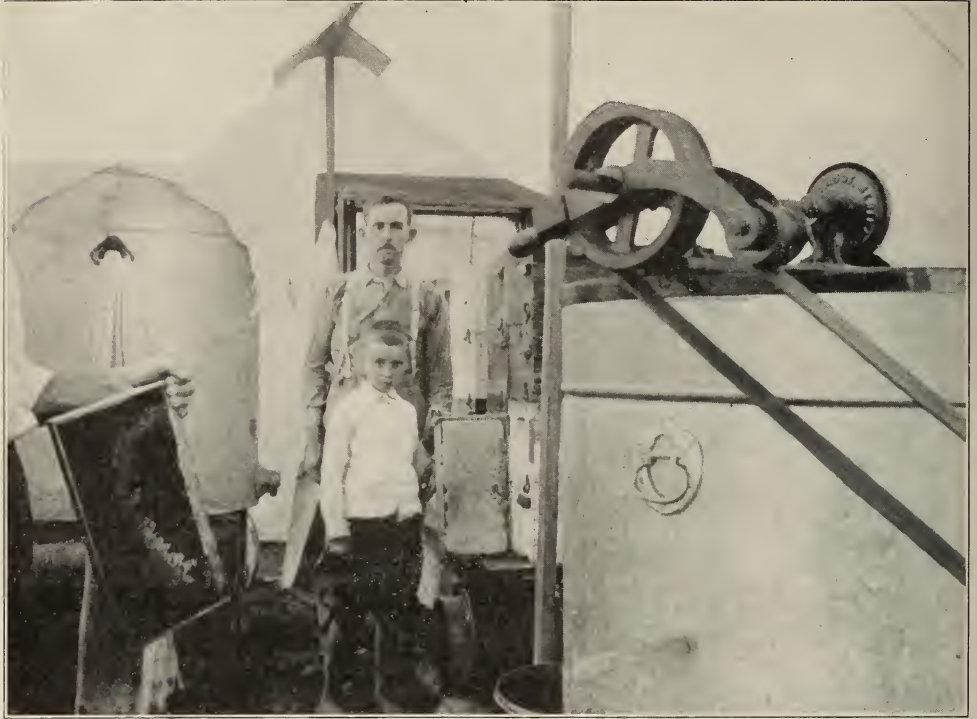


FIG. 1.—INTERIOR OF J. H. M. MARDEN'S EXTRACTING-TENT, APOPKA, FLA., SHOWING THE EIGHT-FRAME POWER EXTRACTOR, THE STRAINER, AND THE HAND-CAR USED IN CARRYING SUPERS TO AND FROM THE TENT.

dead in front of the hive. Then I gave them a comb of brood. They started several good queen-cells, but just as soon as they hatched from their cells they were balled and killed. Then I concluded I would join it to a neighboring colony which was not so strong, and, of course, this one was weak. When I tried to move it I noticed that some of her bees I had shaken down behaved strangely—lifted their bodies, buzzed, and walked under the bottom-board. I found about a handful of bees clustering under the bottom-board, in the center of which was our old clipped queen which had evidently remained there from the time I shook them, which was then six weeks. She was located just where the alighting-board presses against the back part of the bottom-board, and there was a crack barely large enough for the bees to press through, but too small, apparently, for the queen.

Well, though the colony was weak by this time, and the bees old, I thought, as a matter of experiment, I would see what she would do if placed on the combs with her bees. She almost immediately began laying; but the bees built four or five fine queen-cells. I thought they would supersede her; but she filled the combs so full of eggs in a short time that the bees, I take it, concluded that she was equal to any young

queen, and the queen-cells were torn down again before young queens issued.

From the foregoing experience I conclude that, when we have a colony that kills its queens that are introduced, very likely they have a queen hidden from our view, but which, after a diligent search, an eye trained for observation will, in the majority of cases, find. It also proves to me that the non-laying of a queen is not the only cause for supersedure.

Nashville, Ills.

EXTRACTING HONEY IN A TENT.

Something about the Shed Apiaries of Florida.

BY I. H. M. MARDEN.

Last season I used a tent for extracting my honey. So far as the light is concerned, it is all that could be desired; but I find that there should be a separate canvas a little above the tent to keep the sun from shining on it and making it too hot inside. On one day it was so warm that paraffine would soften enough inside the tent to run. The tent stands at one end of my shed apiary, which is 10 feet wide by 150 feet long—a row of hives facing out on each side. In the middle, between the two rows of hives, is a track, and I use a car to carry the su-



FIG. 2.—MARDEN'S SHED-APIARY, 150 FEET LONG, WITH THE EXTRACTING-TENT AT THE FURTHER END.

pers up to the end where the honey is extracted in the tent, and then the empty supers are also brought back to the hives in the car. The illustration of the interior of the tent shows the car with a load of supers. I can carry twelve supers at a time and run them into the tent. I move my bees three times a year, and I use the car for moving the hives out to the wagon, and at the other shed I have another car which I use in the same way. The framework of the shed is covered with a good roof of galvanized iron.

As shown in the illustration I use a two-frame extractor-can for straining the honey. Over the top of the can I put a piece of galvanized wire cloth, and secure it with wire around the can. Over the wire cloth I spread the cheese-cloth strainer. As fast as one cloth gets clogged I fold it back and put on another one without stopping the work. This can is high enough so that the

strained honey from the gate at the bottom may run directly into a barrel.

Our cappings are melted in a capping-melter, and the honey that goes through the melter is kept separate in five-gallon cans; and when there is enough of it I run it through a strainer, put it in a barrel, and sell it as dark honey.

The extractor is eight-frame, run by gasoline-engine, which stands on the floor out of sight.

Apopka, Fla.

THE METCALFE END-BAR HOLDER.

A Handy Device for Putting up Section-holders and Shipping-cases.

BY O. B. METCALFE.

The drawing illustrates a contrivance which will hold the end-pieces of section-

holders in exact position while the slotted or bottom piece is being nailed to them. Without any alteration it will also hold the two ends of a comb-honey shipping-case in exact position while the back board is being nailed on.

a and *b* are small wooden fingers fastened to *f* by screws *g* and *h*. They are left just loose enough to turn easily on the screws. The contrivance may be made to stand up on the bench by nailing to its back two blocks which taper off to the bench, and in turn nailing these to the bench.

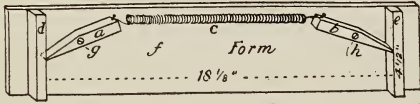
To use it, pick up



FIG. 3.—LOOKING DOWN THROUGH THE APIARY TO THE DOOR OF THE EXTRACTING-TENT.

A hand-car runs through the middle of the shed, on which the supers are carried.

two end-pieces of a section-holder or shipping-case (one in each hand) and thrust them down between the cleats *d* and *e*, and the ends of the fingers *a* and *b*. This will stretch the spring *c*, and its recoil force will, by means of the fingers, hold the two pieces firmly in exact position for nailing.



Only a few dimensions are given, because the other dimensions may be varied to suit the material at hand. It is important that the cleats *d* and *e* be exactly $4\frac{1}{2}$ in. for putting up standard-size section-holders so they will hold the bottom piece exactly in place, and yet will not stick up far enough to hinder in nailing.

I bought a few section-holders last spring with thin end-pieces which were evidently intended to be nailed slightly back from the ends of the bottom-piece. To use the above contrivance for putting up such section-holders it is only necessary to nail to the cleats *d* and *e* two thin slats of the thickness it is desired to have the end pieces set back, and not high enough to interfere with nailing on the bottom piece.

I made one of these contrivances two years ago in about twenty minutes, and I think I am safe in saying that it has since saved at least \$15.00 for us in my time and that of hired help, besides the great satisfaction of having the work well done.

Just who originated it I do not know, but the honor perhaps belongs to a man by the name of Gathright, who kept bees in the Mesilla Valley before my time as a bee-keeper here, for I found at his old place, among some of his old bee-supplies, some such contrivance, but much smaller.

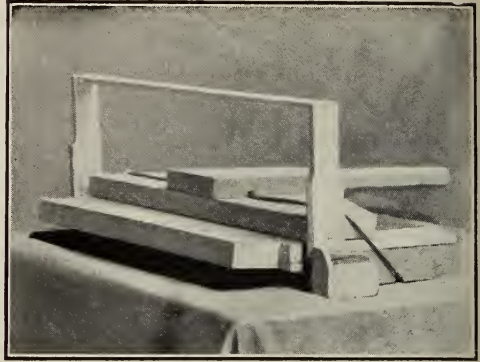
Mesilla Park, N. M.

FASTENING FOUNDATION IN SHALLOW FRAMES.

A Machine Working on the Principle of the Parker Foundation-fastener, which Serves Admirably in Securing Foundation in Shallow Frames; a Great Convenience for Bulk-comb-honey Production.

BY J. J. WILDER.

In the production of bulk comb honey it is necessary, of course, to secure foundation time after time in frames from which combs of honey have been cut. The double-groove-and-wedge plan for this purpose is hardly satisfactory, since it is so difficult to clean the old wax out from the grooves. I have made a little machine which works on the principle of the Parker foundation-fastener for securing starters in sections; but it serves the purpose far better for fastening either starters or full sheets in shallow frames, because the top-bars of such frames are rough,

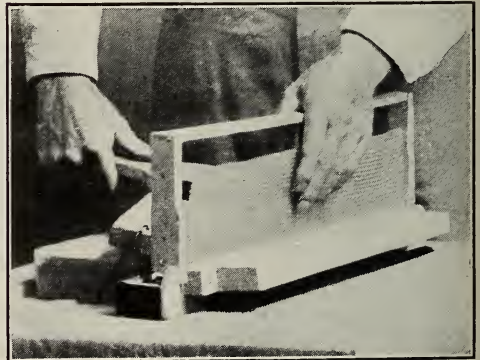


Wilder's fastener for securing foundation in shallow frames.

and the longer they have been used the better the fastener works. It makes no difference whether the grooves in the top-bars are filled with wax or not. If they are, this machine fastens the sheet of foundation to the wax; whereas if the grooves are open it fastens the foundation to the edge of the groove so that, when the sheet is turned at right angles to the under side of the top-bar, it hangs in the middle of the groove.

It might be argued that it is a waste of foundation to crowd it into the wood as this device does; but I find that more than two rows of cells are rarely used. On the other hand, the loss of wax by other processes of fastening is far greater. Even with the melted-wax plan I usually use from three to five dollars' worth of wax each season, and then by this plan there is a very thick line of wax at the top of the honey when it is removed from the frames. My plan overcomes this objectionable feature.

Furthermore, with the melted-wax plan there has been no end of breaking down of starters and full sheets of foundation in handling supers before they are on the hives and even after the bees are in them. The reason for this is that there is only a very thin edge holding the sheet of foundation,



The machine in operation, showing that it works on the principle of the Parker foundation-fastener for putting starters in sections.



FRED HOLENBECK'S METHOD OF PACKING THAT RESULTED IN NO LOSS LAST WINTER.

and many times this edge is weakened by hot wax. The melted-wax plan, moreover, allows no swing, and consequently many sheets give way and drop down.

By the pinching or rubbing process, as employed in my machine, a fair amount of swing is allowed, and shallow supers with foundation thus fastened can be roughly handled and even thrown on wagons and hauled for miles to the apiaries without doing any damage. We have often had supers fall off the top of the wagon to the ground, and yet the foundation did not break loose. As a precaution, however, we usually carry along the machine when taking loads of supers to the apiaries, and place it on the top of a hive in some shady place. Then if, for any reason, any of the sheets have given way, they can be quickly put back with little loss of time.

The fastener is simple, and any mechanic could make it in an hour's time after the proper material has been obtained. The material is about $\frac{1}{16}$ inch thick. The piece attached to the lever that serves to press the foundation into the top-bar should be made of hard wood; and the wire, used as the movable hinge, should be heavy enough to stand the strain. I used a wire hoop from a sugar-barrel, the ends being turned over under the machine, and securely fastened with staples.

It is easy to fasten foundation with this machine. The board that presses in the wax should be dampened occasionally on the under side where it comes in contact with the wax, so that it will not adhere to it. The lever should be raised about the same as the one on the Parker fastener; but

the foundation should not be pressed hard enough to mash it the instant the lever touches it, as this would be likely to cut it in two. There should be just enough pressure at the start to make the wax adhere to the wood, and then the lever should be pulled up gradually until the wax is smoothed out on the top-bar.

Cordele, Ga.

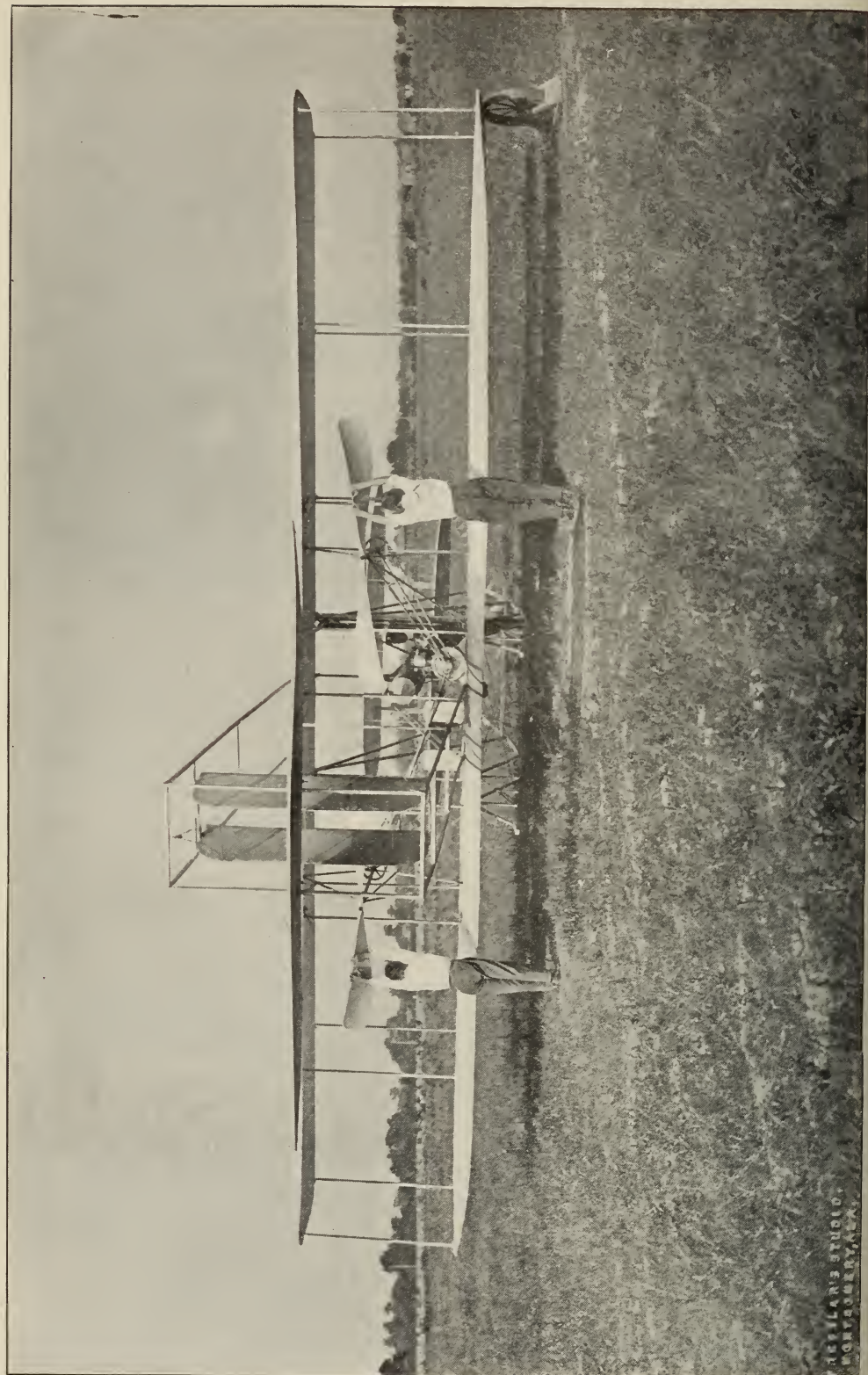
A WHOLE ROW OF HIVES COVERED WITH TAR PAPER FOR WINTER.

BY J. C. BOGARDUS.

I am sending a photograph of Mr. Fred Holenbeck's colonies as they were last winter. They were packed with leaves, and covered with tar paper. Every colony came out fine last spring.

For protection a piece of carpet is cut to fit over the frames under the cover. This lies flat on the top-bars. Between and back of the hives dry leaves or buckwheat straw is packed, and then more of the material placed on top over the covers. The back is made rather higher than the front so that when the tar-paper roof is put on, the water may run off. The tar paper is cut in pieces and tacked on with lath at the top and bottom, a hole 2x6 inches being left in the front to give an entrance for the bees of each hive. The entrances, which face the east, are contracted by entrance-blocks to the size 2x $\frac{3}{8}$ inches.

Horseheads, N. Y., May 20.



WRIGHT BROTHERS' UP-TO-DATE FLYING-MACHINE FOR TWO PASSENGERS.

WRIGHT BROTHERS' UP-TO-DATE FLYING-MACHINE FOR TWO PASSENGERS.

WHAT IS MEANT BY "SEALED COVERS" AND "ABSORBENT CUSHIONS"?

How the Details Affect the Results of the Two Plans.

BY E. WRIGHT.

Your editorial remarks on sealed covers vs. absorbents, April 1, give me a strong desire to "butt in" and ask just what you have in mind when you speak of these two things. Do you do away with the bee-space above the top-bars when you use cushions? Do your conclusions apply to single-walled hives?

You say it seems to be proven again, that, for your locality, sealed covers have the preference; that the bees under them winter perfectly. And you say that you have a suspicion that those who so loudly champion the absorbing-cushion plan of wintering may not have tested the two plans side by side. Pardon me; but have *you* tested the two plans, other conditions being equal?

Year after year you have been making statements about the two plans which are not clearly understood by me; and I am wondering how your other readers understand you—that is, what do they picture in their minds when you say "sealed cover" and "absorbent"?

There is a very grave difference in results between a cushion laid directly upon the top-bars and a cushion over a Hill device, especially with single-walled hives; yet you appear to ignore this point. In my opinion a bee-space above the top-bars is of more value than a sealed cover. Oil-cloth makes a sealed cover without the bee-space. In testing this wintering problem we should all be careful not to create a condition in one case that does not exist in the other, such as having no bee-space in one and not in the other.

Where a Hill device is used, there is a clustering-room for zero weather which I believe to be worth more than a mere bee-space. If you use a Hill device, then what kind of quilts do you use? This is a most important factor if you use a light packing like forest leaves. I had one colony die of mere "coldishness" with a new muslin quilt with a Hill device and a foot of leaves. There was a draft right through that hive. Another colony came through "a whooping" under the same conditions, except that it had a heavy canvas quilt which prevented all draft. With cork-dust cushions it is not of so much importance what the quilts are; and the same might be said of fine pine sawdust; but heavy duck or canvas quilts should be used with light packing, such as cut straw, coarse planer shavings, etc.

A colony on closed-end L. combs is almost sure to die of starvation with plenty of honey in the hive in a hard winter with a quilt directly on the top-bars, and without a winter passageway; and I am not sure, but I think that Hoffman frames will give nearly the same result in single-walled hives.

Now, when you tell your readers that sealed covers are best "in your locality," what proportion of those readers picture a chaff hive in their minds in connection with the remark? Perhaps the majority, but how about the minority? I know of but one man who uses chaff hives around here. I let ten chaff hives stand empty this winter because I have so much faith in your Hill devices on single-walled hives, and yet you are not booming these things at all.

Bees packed in chaff hives *ought* to winter in spite of sealed covers in Medina, and no doubt would make a better showing than bees with a porous burlap quilt which allows a draft to suck the vitality of the colony.

I have succeeded up to date in wintering a three-frame nucleus (closed-end frames, spaced $1\frac{1}{2}$ inches center to center) under a heavy canvas quilt with a miniature Hill device, warm dry packing above, with a tight bottom-board, and a half-inch-square entrance. This was in a single-walled hive with no chance for a draft through it. I always give good ventilation above the cushions to keep them dry. I just *know* these bees would have been dead by now had they had what I picture in my mind when you say "sealed cover."

I know a man who says he winters under sealed covers; and when I went to see his bees I found that he called oil-cloth a sealed cover. Another man I know says he winters with sealed covers; and if you examine his bees you will find the sealed cover five inches above the top-bars. He puts an empty shallow super under the cover in order to give his bees clustering room. With such a plan he says he never is bothered with dampness or mold. Here are two extremes of sealed cover.

Last fall I left ten colonies under sealed covers with a bee-space above the top-bars and with warm packing above; and these bees suffered severely from dysentery, and the combs were damp and moldy, with an entrance $\frac{3}{8}$ by 12 inches, and a $\frac{1}{8}$ -inch space under bottom-bars. No such damp conditions existed with about seventy colonies with absorbing cushions and single-walled hives. Wouldn't it be folly for *me* to use sealed covers, even were I in Medina?

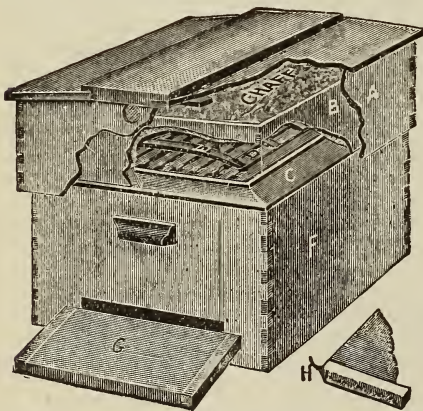
Morton Park, Ill.

[It is very evident that you have read but little of what we have said on the subject of sealed covers vs. absorbent cushions; and it would appear that even what you have read you went over so hurriedly that you must have missed much of what we have written. In the very editorial to which you refer, one of your questions was answered very explicitly. Referring to the absorbing cushion and sealed covers you ask in the last sentence of your second paragraph, "But have *you* tested the two plans, other conditions being equal?" For answer to this question please turn to the editorial to which you refer, viz., April 1st GLEANINGS, page 207, last paragraph, first column, where you will find, "When it is remembered that we have tried these two forms of wintering (sealed

covers and absorbents) side by side for a series of years, with the odds nearly always in favor of sealed covers, the reader can naturally see why we champion that plan, at least for our locality." Now for the "other conditions being equal," note that we say, "The great majority were packed in double-walled chaff hives, and a few in single-walled hives were wrapped in paper winter cases and a few in wooden winter cases." While we did not say in this connection that the sealed-cover colonies and the absorbent-packed colonies were in exactly the same kind of hives, the reader could hardly infer anything else in view of all that was said in that connection. Then you ask in this same article, first paragraph, "Do your conclusions apply to single-walled hives?" The sentence just quoted, which you must have hurriedly skipped, ought to answer that question.

With regard to sealed covers we have repeatedly mentioned the fact that we use a plain thin board, usually of one solid piece, tin-bound at the ends. This is laid on top of the brood-nest of the double-walled chaff hive early enough in the fall for the bees to seal down hermetically, and this sealing is not broken until the next spring.* If you are at all familiar with bee-supply catalogs you would know that this would leave a beespace of approximately $\frac{1}{8}$ inch between the sealed cover and the tops of the frames beneath.

When we refer to absorbing cushions we have *always* meant the plan that is spoken of in the various editions of our A B C of Bee Culture. Turn to almost any edition, and you will find under the general head of "Wintering" a cut of one-story double-walled chaff hive with a Hill device, showing the whole plan of wintering under absorbing cushions in connection with double-walled hives. We reproduce the cut here.



We used the absorbing-cushion (or tray) plan for years before we adopted the sealed-cover idea; and when we used absorbing plan

we always used the Hill device, or some device equally good, to hold the cushion one inch or so above the frames, so that the bees will form a winter nest directly beneath.

Whenever we worked this plan we used a burlap cover. Instead of a cushion we used a tray with a burlap bottom tacked on loosely, so that, when it rests upon the Hill device, it bulges upward. The packing material is then poured on top. A telescope cover that does not come in contact with the packing material covers the whole. When using the absorbing plan we never allow the cover to come in contact with it, as this would defeat to a great extent that plan of wintering.

Apparently you have tried the two plans, but on a very small scale, if we may judge from your fifth paragraph; and right here you give one very strong argument in favor of the sealed cover. You say that heavy duck or canvas quilts should be used. Canvas and heavy duck would be largely impervious to moisture, especially after they had been used a few times. While they might possibly become a little damp the moisture would not pass through them readily. If they did, they would not be the prevailing material for making tents that have to stand rain and weather.

If you will take the time to read over what we have said on this subject, particularly what is said in the last edition of the A B C and X Y Z of Bee Culture, you will understand the reason why some people get better results with absorbing cushions, and why others succeed better with sealed covers. We admit that in a *cold* climate subject to deep snows the absorbent-cushion plan is to be preferred. One reason of this is, that deep snows are liable to close up the entrance. A closed entrance with a sealed cover means death to the colony in nearly every case. The other and chief reason is that, in a continuously cold climate, the atmosphere is dryer. In a milder climate, just south of Lake Erie, as we have it at Medina, there is too much of mild weather, and with it an excess of moisture to make the absorbing plan equal to the sealed-cover method.

We have tried both plans side by side under *precisely the same conditions*, same kind of hives and packing material, for some ten or fifteen years. We have had a number of different apiarists at Medina, and you can ask any of them and they will tell you that the sealed cover gives better results at Medina.

This whole question is one that is dependent upon locality, somewhat upon the hive, the depth of the cushion, and the material of which it is made. We think we know something about the absorbing plan, because we used it for nearly twenty years before we adopted the sealed-cover way.—ED.]

*In GLEANINGS of last fall, Nov. 15, page 700, we went into the minutest details. We quote: "The apiarist lifts off the tray and under it we find a super cover with tin binding for the ends to prevent warping. This is sealed down with propolis all

around, making a hermetic sealing, or what we call a sealed cover." This was accompanied with a series of illustrations, two of which showed the sealed cover and how applied. You will also find the same thing in the last editions of the A B C book. We do not see, friend Wright, how we could be any more explicit.

THAT NEW BEE DISEASE.

Is Not the Trouble Caused by the Bees being
Confined too Closely After Working Heavily
on Some Particular Blossom?

BY JAMES M. PULLEY.

The correspondence by Catherine Beattie, June 15, and the more recent one of E. F. Robinson, p. 516, Aug. 15, are interesting to me because of a similar occurrence recently in my own yard, and in a greater or less degree in several other small apiaries in this locality.

Personally I can not attribute the trouble to any particular disease, but I think it is owing to bees being more or less confined when they are full of nectar from some particular source. In the case of the bees in my own and neighboring yards this year it was while they were working on blackberry bloom that the trouble occurred, and the weather was decidedly wet; yet the blooms were so attractive that the bees worked them every possible minute from early morning until dark; and with the approach of rain there was a hurried flight for the hives.

This, in my opinion, gave the bees no chance for inverting the nectar, which seemed to have in its uninverted condition the tendency to bloat, such as your previous correspondents referred to. Many bees could be found lying around, apparently in the same condition that the yellow-jackets are in the fall when they find quantities of ripe fruit on which they "glut" themselves, and which seems to ferment and prevent their rising on the wing; and when they get into a very advanced condition from the effects of the apparent fermentation there is a case of what looks like paralysis, with only a poor attempt at flying, or even only a vibration of the wings. I have on many occasions killed scores by treading on them (the yellow-jackets), and it appears to me this bee trouble is identical, and to which I would pay no attention were it not for the fact that a hive of bees can be decimated fifty to eighty per cent (estimated) in a week or ten days, and it is the most noticeable in a newly hived swarm where there is no brood hatching to take the place of the failing bees, while at the same time the queen will be shrunken to the size of a virgin; and the apiarist who does not recognize it will expect to see signs of supercedure, which does not take place; but it will so badly decimate the colonies affected that the chances of a surplus for the season are almost hopeless. The harder the bees work, the worse the case; consequently the best bees are the worst affected. Left alone, the bees slowly recover, and the queen resumes her normal condition; but it is a severe blow to the whole apiary.

I do not know if feeding good sugar syrup at such times would effect a cure or modify the trouble. I throw it out as a suggestion in the hope that some may try it, and that

our best queens may not be condemned for producing a disease when I really believe they are producing the more energetic workers which get poisoned by the rankness of the nectar gathered¹ because they can not take the necessary exercise immediately upon gathering it, so that it can be inverted without delay.

I submit this to your readers, as it appears to have come under my observation on several occasions — not so much at one particular season of the year, but at several, and would apply at any reasonably moist time when bees would have time to gather a load of nectar and hurry home without a chance to invert it properly.

Melrose, Mass., Sept. 2.

YOUNG BEES NEEDED TO INSURE SAFE QUEEN INTRODUCTION.

BY WM. M. WHITNEY.

On page 564 Mr. E. L. Dickinson gives an interesting account of failure in attempting to introduce a queen to one of his colonies, and asks the editor or some reader to explain why this particular colony should be so stubborn in the way of accepting a queen. Now, I'd like to give my idea as to the cause of the trouble. I gather from his account that this colony is made up, or nearly so, of old bees. He says they were filling their comb full of honey, and not a cell having an egg. There were no nurse-bees, or but few, to prepare food for larvæ. Why should there be? There were no larvæ to feed. Evidently there was a fair honey-flow on, and the whole force was busy storing supplies. This colony might have developed laying workers, but that would depend upon the season of the year. If *late* in the season it would not be likely to. But what is the remedy in such a case? Before attempting to introduce a queen, which should be a laying one, smoke the bees sufficiently to cause them to fill themselves with honey, which should be done toward night, when they are likely to be all at home; then move the hive to one side and place on its stand another with a couple of frames of brood in all stages of growth, taken from some hive that can spare it, being sure that there are plenty of hatching bees. Over these, in the center of the hive, place the caged queen as per instructions; then shake all the bees in the parent colony on to a cloth at a distance from the stand and let them return at their leisure, filling up the hive on the parent stand with the frames after the bees are shaken. I venture the opinion that there will be no killing of the queen when she is released from the cage if this method is adopted.

Mr. Editor, your mistake in the case you cite, I opine, was in giving to the colony a frame of "freshly laid eggs" instead of a good supply of hatching brood to furnish nurse bees.

Batavia, Ill., Sept. 8.

AMERICAN FOUL BROOD.

Some Proof that Henry Stewart has It; a Reply to Geo. M. Steele, Page 531, Aug. 15.

BY HENRY STEWART.

At the National bee-keepers' conventions I have seen samples of American foul brood which looked and smelled identically the same as that does which I now have. Furthermore, I have sent samples of the disease in my yard to Dr. E. F. Phillips, who has pronounced it American foul brood. I have also seen samples of American foul brood at the apiarian department at Washington. State Inspectors Smith, More, and Piles at different times have inspected my bees, and on each occasion pronounced the disease American foul brood. It looks like the picture of the American variety; and if there is a bad case of it in the yard, one needs only to follow his nose in order to be led directly to the hive. Yes, I am quite sure I have the genuine American foul brood.

Mr. Steele says that bees can not clean out the dead brood having the bad odor of the American foul brood, and that I will, therefore, have to retract. All right; no one could be more ready to retract than I, when convinced that I am wrong; but I should like to inquire whether this statement by Mr. Steele is founded on actual observation or borrowed from the statements of others. If borrowed (which I surmise) it might be well to go to the bees for proof.

There are a great many things about foul brood that I do not know, and some other things that I am not sure of; but if there is any one thing about the subject that I do know positively it is that bees can and will and readily do clean the ropy bad-smelling brood of the American disease from their cells, and any one else can be just as positive as I am if he will just go to the bees for proof. It does not take a scientist to prove this, as any one can find out for himself. It is not too late this fall. The worst foul-broody comb that can be found should be placed over a queen-excluder above a foul-broody colony of good strength. If the results are watched, the foul-broody matter will be found disappearing, and patches of nicely polished cells taking its place. The longer the time the larger these patches will become; and if the conditions are at all favorable it will finally take a good deal of hunting to locate the least evidence of foul brood in this once rotten comb.

Outside of a honey-flow I am not positive that my plan will always work; but I know that it sometimes will work, and it is my belief that it generally will if not always. I base this belief upon the experience of the queenless foul-broody colonies mentioned in my first article, page 415, July 1, as well as on my observation of the bees cleaning up the outside combs as the brood-nest is contracted after the honey season; and, finally, on my experience this summer, which

was as follows: Warm weather and the honey-flow began here June 10. From June 15 to 20 I placed all foul-broody combs above queen-excluders, keeping the queens below. The honey-flow continued good up to July 1, when the drouth dried up the clover, and my scale hive quit gaining. July 10 the scales showed a loss of three pounds. This was a new condition for me. The honey-flow was done, and the combs were only partially cleaned up, as an examination showed in a large part of the hives that the foul brood could still be seen below. What to do I did not know; so in most cases I did nothing except to watch results. The drouth continued; conditions went from bad to worse; but the cleaning up went on, and about August 1 I extracted the combs, and not a sign of the disease could be found in any of them. I then put them back on the hives for refilling. There are about two hundred of these combs. When they come off the hives again, no effort will be made to keep them separate, and they will be lost sight of with the thousand or more combs which were previously foul-broody, and which are now being used as extracting-combs. Conditions could not be worse than they have been here this summer, the drouth at this date (Aug. 29) being still unbroken. We have not had a good rain since May. After extracting the white-clover honey the extracting-combs were drained dry and the honey taken below. If it were true that I have been working under a delusion, and the once foul-broody combs have not been cleaned up, can any one imagine the condition my colonies would be in? The word "rotten" would not express it. However, I have just inspected each colony in my home yard, and out of two hundred I have found but six new cases, and these probably came from my neighbors' foul-broody hives, and not from the cleaned-up colonies.

Prophetstown, Ill.

[Mr. Stewart is not only an extensive bee-keeper but an expert. What he can and has done, others might fail in. It is our opinion that the average bee-keeper had better not try to save combs of American foul brood. There is too much risk.—ED.]

ELIMINATING THE SWARMING IMPULSE.

What may be Accomplished in Other Animals by Careful Breeding.

BY W. E. FLOWER.

On page 529, August 15, is an article by M. E. Pruitt on hereditary influences, and I wish to take exception to some of the deductions made. In my opinion the swarming impulse can and will be eliminated just as soon as we can control the mating of the queen and drone. Cutting off lambs' tails is not breeding, neither does it come under the topic "heredity." Jonas Webb, by careful breeding, eliminated the horns from the Southdown sheep, securing a superior

breed of mutton sheep. Has any one tried to *breed* the tails from lambs? Would this be more difficult than breeding the tail from a cat? It is a fact that many cats have no tails. When we can once get control of the mating I firmly believe that it will be just as easy to eliminate the swarming tendency from bees as it was to eliminate the desire to sit, brood, or incubate from the Spanish Leghorns, Minorcas, etc., and produce a breed of fowls from which the natural desire to incubate had been practically eliminated.

I believe it is generally conceded by competent authorities that our domestic chickens are descended from the wild jungle fowl of India, a small bird weighing about three pounds. From this fowl, man has produced an almost endless variety of distinct breeds, from the gigantic Cochins and Brahmas to the diminutive Bantams—some having three combs, some rose combs, and others single; some having feathers on their legs; others, five toes; some, the crest and beard; some white and others black; some are spangled and others laced. The keynote to the whole situation is the control of the mating of the breeding stock. Some cattle-raisers practice dehorning, while others breed cattle that never have horns.

In conversing with the late Mr. Pratt, of Swarthmore, Pa., on this subject, I found him thoroughly in accord with the foregoing opinion; and had his life been spared a few years longer I have no doubt it would have been successfully worked out. This is one of the things that I hope to see the Philadelphia Bee-keepers' Association give their special attention to in the near future. If any one is skeptical about this, let him turn to the 30th chapter of Genesis, and, beginning with the 31st verse, read carefully to the end of the chapter. I believe it would take less time with bees than with animals, because several generations could be produced in a single season.

Ashbourn, Pa.

MORE ABOUT THE CONDITIONS IN THE OZARK MOUNTAINS OF MISSOURI.

BY OTIS A. GRIFFITH.

I have received letters from almost every State in the Union, asking me to tell the truth about the Ozark Mountains, and I feel it my duty to give the facts. This is a rough hilly country with rocks, steep hills, high bluffs, and with nice valleys which are very rich, the valley land all being in cultivation. Not half of the hilly land is in cultivation or even fenced off. Half of this county (Barry) is very rough, and there are thousands of acres of this land that will never be of any value, on account of so many sharp ravines and steep hills, which are densely covered with fine oak timber, cedar, and pine. The northern half of the county is as smooth as Iowa or Illinois land, and has six good railroad towns, Cassville being the county-seat.

This hilly land will produce corn, clover, or wheat as well as vegetables of all kinds, if places can be found that are not too steep. The north and east slopes are very fine for all kinds of grain.

We have about ten counties in this part of Missouri that are very rough, including Barry, Stone, McDonald, Newton, Taney, Texas, Dade, and Green. All of the southwest part of Missouri is rough, yet we have a fine mild climate with short winters. We have good roads, schools, and churches.

Those who advertise Missouri will do well to invite strangers to come to the Ozark region and *rent* a small farm the first year and be exceedingly careful how and where he spends his money until he becomes accustomed to the natives, as he is liable to leave the second year a broken and disheartened man. The land sells for from \$3.50 to \$40.00 per acre according to the location. A thousand dollars will buy a good home; but the man buying it must know something of the people, as those ten miles from the railroads are very different from those close to town. Those wishing to come to this county to make it their home should keep out of the hands of the land agents, to avoid getting a big elephant on their hands.

This is a fine bee country, but there are only a few who keep bees as a business. I have been a bee-keeper for many years, and I honestly believe if we had the right kind of men this would be one of the best States in the Union for honey and bees. We have fine spring water, and wild flowers everywhere, white clover being the main source of honey. Bulk or comb honey is in great demand at 15 cts. a pound, fancy honey bringing 20 cts.

In response to my short article, page 378, June 15, describing buckwheat-raising in the Ozarks, I have received over one hundred letters asking for full particulars, one lady in British South Africa asking for the truth about the conditions here. I hope that the above will answer these questions.

Scholten, Mo.

Condensing Moisture on the Front Hive-wall During Winter.

Packing colonies for winter with the thickest packing on the top, so that the moisture will condense on the sides of the hive, has been recommended. Mr. C. L. Fisher, of Central Bridge, New York, has a winter case with a 7 x 9-inch hole cut in the front so that the front side of the hive is exposed to the cold air, thus condensing the moisture at this point so that the water will run down and out of the entrance on warm days. He has made a good record with these cases. I myself borrowed 38 of the cases last fall, and successfully wintered 36 colonies, and found them better than any thing I had ever tried before. One of the two that died was very weak last fall, and I think that mice were partly to blame for the other. I should like to hear from other bee-keepers as to whether this plan has ever been tried, and, if so, with what result.

Sloanesville, N. Y.

R. V. Cox.

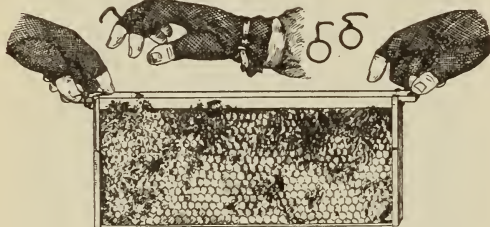
[It would seem to us that the necessarily lower temperature in the hive, that would result from having the front wall exposed to the cold air, would offset any advantage of the moisture condensing in the manner described. In other words, would not the remedy be worse than the disease?—Ed.]

Heads of Grain

from Different Fields

A Hook Worn on the Finger to Help in Pulling Out Frames.

I have a little tool that I have found very useful in removing frames from hives, especially when they are filled and there are a lot of bees in the way. I take a piece of telegraph wire or other stiff wire and bend a ring to fit over the first or second finger sufficiently close so it will not fall off (over the glove if used). Bend a hook to reach under the end of the frame. It may pass through the small staple, which secures it from slipping off. After hooking securely the frame is easily raised an inch or two, when it may be grasped by the thumb and finger, and pulled out. The hook slips down between the ends of the frames quite easily; and I find it a great help when I wish to handle bees quickly, more especially if there is a strong colony and a lot of propolis. One great convenience is, it may be left on the finger without in any way interfering with the operator while at work. Thus there is no danger of its getting lost.



This is an ideal spot for bees—perpetual summer with a constant supply of wild flowers; but I find it difficult to keep them working. They are inclined to knock off as soon as they have accumulated a small supply, and take things easy. There is an abundance of wild bees found in small swarms in all sorts of places—crevices in rocks, ant-heaps, and even mole-hills in the ground. They often shift from place to place as the season changes—to the mountains in summer and to the valleys in winter.

R. ROVING.

Caledon, Cape Colony, South Africa, July 10.

Full Sheets of Foundation in Frames Fastened to the Bottom-bar.

I have trouble in getting my combs built down to the bottom-bars. I have been using full sheets of foundation, wired in, for a year or two, and now the combs are beginning to stretch, and cells toward the top-bar are becoming oblong on account of it. As early as possible I wish to get rid of these combs and put new ones in their place. I understand that the Miller plan is to have larger sheets of foundation than are regularly supplied for Hoffman frames—large enough to come to the outside of the bottom of the frame, and using a bottom-bar made of two parts, allowing the foundation to go between the two halves of the bottom-bar. With this I understand that Dr. Miller uses splints. With this arrangement does honey-comb usually stretch as it otherwise does? How would it do to have comb arranged as above, but wired instead of using the splints?

This year I tried this arrangement: Instead of securing the full sheet at the top, as is supposed to be done, I dropped the full sheet to the bottom-bar, wired it as usual, cut a narrow strip, and secured it at the top in the usual manner with wedge. The results so far are all that could be desired. I think there must be some objection to this, however, or it would probably be in general use. I should like it if you would point out the objection to this method.

In the frames with which I experimented I used the sheets of foundation regularly supplied for the Hoffman frame. Instead of securing the sheet at

the top, as usual, I dropped it to the bottom of the frame, imbedded the wires as usual, and also used two or three splints. In top of the frame I placed a narrow strip of foundation to fill out the frame. There was no buckling whatever, somewhat to my surprise. It is just possible that the sheet expanded upward.

Rocky Mount, Va., July 27.

S. PRESTON.

[Dr. Miller will please answer this in a Straw.—ED.]

Black Bees and Moth-worms; a Hen 11 Years Old.

On p. 565, Sept. 1, I noted a communication from J. D. Thomas, of West Virginia, entitled "Moths do not Molest Strong Black Colonies," which I am not going to contradict, as I am not informed to the contrary. What I wish to know is this: If J. D. T.'s bees are what he claims them to be, will he please rear queens from this superior stock, so that we less fortunate bee-keepers may secure a start with bees that are superior to those which we now have? I have never had the pleasure of seeing the blacks surpass the Italians in superiority.

If J. D. T. will rear his queens and advertise them in GLEANINGS, and if they will do for me what he claims they do for him, he may count me as a customer as long as I handle bees. If he does not wish to rear queens, will he send one of his breeders to a reliable queen-breeder so that he may put them on the market?

I wish to tell A. I. Root that we have a hen that was hatched May 5, 1899, having passed her eleventh birthday. She laid a few eggs during the summer of 1909, or after she was ten years old.

Montpelier, O., Sept. 12.

G. W. JOICE.

Some Strains of Bees Immune to Foul Brood.

I have had both American and European foul brood in my apiaries for the last four years, and I find that shaking is an expensive proposition. Then it all depends on the strain of bees whether the shaking plan is a success. Some strains of Italians and the black bees that I have had can not be cleaned by the shaking process.

Two years ago I bought 25 Italian queens, and I find that they are nearly immune to disease; in fact, I put some of the queens in slightly diseased hives and have never found over three or four cells of disease at a time in those hives. Not all of the queens were as good, for some colonies showed the symptoms badly; but when I shook them they stayed clean.

I shook several colonies at my home yard on clean combs this spring, as Mr. Stewart described in his articles, pages 415 and 445. I did this just for an experiment, before I knew any thing about Mr. Stewart's experience. I put the brood above, over a queen-excluder, and the colonies are all clean now. I have good Italians of a strain that resists disease.

Trumansburg, N. Y.

E. L. LANE.

[See Editorial in this issue.—ED.]

A Good Showing for Montana.

I have been in the bee business some six or seven years; and after my experience and what I have read I have come to the conclusion that different climates require different methods of handling. I have never yet read of average yields that have quite come up to what I have got here in Montana. My crop has never fallen below 100 lbs. average since I have handled bees. This year I have taken over 8000 lbs., extracted, from 29 colonies.

There are many things in bee-keeping that I know very little about; but I do know that when I go after it myself I get the yield; and I have learned that it will not do to trust it all to hired help, no matter how much they claim to know about the business.

Laurel, Mont., Sept. 5.

A. G. RICH.

Eggs that will Not Hatch.

Last spring I had a queen that was a drone-layer. Her eggs hatched nothing but drones; so when I got my first swarm, May 2, I killed the queen and put in her colony a ripe queen-cell. In a few days after, they had a nice queen that was soon laying. Now, not one of her eggs has hatched. They seem to be of good size, and are deposited evenly over the combs. I have given them young bees two different times to keep them going. The bees were in a starving condition by the middle of June. Clo-

ver commenced to yield about the 18th or 20th of June; but by the time the bees were in a good condition the weather changed and the honey quit coming in. I have been looking in the hives, but I do not find any sealed honey in any of them; but they seem to be getting enough to be rearing some brood. I have the A B C of Bee Culture, but fail to find any thing like the case I have mentioned. If you can explain it to me I shall be much obliged.

Cheshire, O., Aug. 8. W. S. PRICE.

[We occasionally hear of a queen that will lay eggs regularly that will not hatch. Cases of this kind will be found in almost every large queen-rearing yard in a season. The queen is structurally defective, and should be destroyed and another one put in her place.—ED.]

When to Take Off Comb Honey, and How Much to Leave for Winter.

About three years ago I got a hive of bees which I have increased to three. I am keeping bees to get a little honey for the house, and not have to buy it. I am not in the business for profit except as I have said. I do not want to keep more than four stands. What I want to know is when to take off the honey, if there is any, and how much should I leave for winter? One hive has two supers filled with sections, and the other two have a super each. Last year was extremely dry, and I did not get one pound. The sections seemed to be filled with comb but no honey.

Memphis, Tenn., Sept. 6.

F. W. WRIGHT.

[Comb honey, as a general rule, is taken off as soon as it is capped, or at least as soon as the honey season is over. To leave it on longer would result in the discoloration of the fine pearly-white cappings. It is the general practice among beekeepers to take off all honey stored in supers. That which is in the brood-nest is usually left. It is much more profitable to take away comb honey or even extracted honey from the supers, and then, if necessary, in the fall to feed up sugar syrup, at less than half the price of the extracted and one-fourth of the price of comb.]

As to the amount, a colony outdoors in your locality ought to have at least 25 lbs. This would mean that there should be between six and seven frames fairly well filled with honey except a little space in the center combs for a winter nest. In a climate like yours a colony will require more stores than in the States north of you. If bees are to be wintered in the cellar, the cellar being dry and having a uniform temperature of about 45°, 10 lbs. might be ample, although we usually figure on about 15. For outdoor-wintered colonies in double-walled hives, near the Great Lakes, we figure that not less than 20 lbs. will be required.—ED.]

Uniting Weak Colonies in the Fall.

Two half-pounds of bees without combs I bought have increased to four hives, but one is very weak. If I put the weak hive on top of the stronger, which has my best queen in it, and put a zinc excluder between, will the better queen in the bottom hive be killed? and would the weak colony on top become stronger for fall before being put into the cellar? I can get but very few combs. I can not get them to work out the foundation. I think I should be very successful with bees if I could only get combs. I have fed every day all summer, whether honey was coming in or not. They have not enough to winter on; and without combs I can not feed the syrup, and the hard candy runs down among the bees and kills them, so GLEANINGS says.

Reedsburg, Wis., Sept. 10. MRS. W. HAYDEN.

[It is rather unfortunate to have any weak colonies at this time of the year. About all you can do now is to unite them, and in uniting you will have to sacrifice one or more of the queens. It is possible that you may have to unite all four nuclei in order to make one strong colony. In that case you would use only one queen. Possibly uniting two of the weak ones would be sufficient. You would then have to sacrifice but one queen. It is not practicable to winter two queens together in two separate bunches of bees. Although an expert may be able to do it, you would be likely to lose one of the queens in any event.]

We do not see any reason why you had difficulty in getting combs. If you practice stimulative feed-

ing—that is, giving half a pint of syrup daily—the queens ought to start laying, and the bees ought to build comb; but it is getting to be so late in the season that it would be impracticable to do much at it now. We should judge that you have not been feeding enough. For particulars regarding uniting we would refer you to the subject of Uniting, in the A B C and X Y Z of Bee Culture, or any other standard text-book.—ED.]

Running Two Queens in a Hive.

I have two ten-frame L. hives that I am thinking of putting one on top of the other, with a wood-and-wire excluding honey-board between, and a shallow extracting-super on top of both of the strong colonies. Each hive will have a queen. Would two hives so put together store any more honey in the super than they would on separate stands with an extracting-super on each one? I have never tried this plan of putting hives together more than a few days at a time; and from all I could see it seemed the bees were inclined to store a larger per cent of honey in the top brood-chamber. Am I right about it? I notice some complain that one or the other of the queens usually gets killed; but I have never yet lost a queen by so doing.

When I receive a ten-frame Jumbo hive which I have ordered, I intend to have a tinner make me a piece of screen wire the length and depth of the inside of the hive, this wire to be fastened in a thin tin frame so it will not take up more than 1/8 inch of space, and slip it down between the center frames. It extends above the top of the frames merely to touch the corner so the queens can not possibly get at each other. My idea is to run two queens in this hive. Do you believe this will work all right? What do you think of such a scheme as this? The thought struck me that two good prolific queens in such a brood-chamber as the Jumbo ought to throw a very strong force of field bees in a super when put out.

Eldorado, Okla., Aug. 25.

W. R. WARD.

[You will find this matter of keeping two queens in a hive to check swarming, and at the same time increase the honey crop, very thoroughly discussed in this journal, running through the year 1906. We would refer you particularly to the articles by Mr. A. K. Ferris, beginning April 1 of that year.]

For your present information we may say it is not practicable to have two queens in a colony, even when separated by queen-excluders, except during a honey-flow. After that, and especially in the fall, one of the queens, as a general thing, will be missing. To work two queens in a hive requires a great deal of skill and experience; and even those who know the most about it have apparently given it up, and hence we hear very little about it now.]

Answering your questions specifically, we think either plan will work when honey is coming in freely; but you will probably find that only one queen will be in the hive along toward fall.—ED.]

Not Another Species, but Ordinary Robbers.

Inclosed is a species of robber bee that I find in my apiary. Are they caused by laying workers, or are they a wild bee? Some of my neighbors are complaining of these bees robbing their apiaries.

Percy, Ill., Sept. 7.

W. C. WILLIAMS.

[An examination of the dead specimens you sent us does not disclose any thing but the ordinary honey-bees. If there has been robbing in the vicinity they are simply ordinary robbers, and should be treated as such. They are not another species, as you seem to infer. They may look like different bees from yours, but a robber bee very often has all the fuzz or hair on its body worn off, simply for the reason that in crowding into entrances, and struggling with other bees, it wears off this fuzz. Moreover, robbers are generally old bees; and when the fuzz is worn off they look to a beginner like a different bee.—ED.]

Where did the Dark Candied Honey Come from?

About the 15th of July, when I was taking off some section honey I found that all the honey, except that left from clover, was granulated, resembling brown sugar. I took from one colony 27 lbs. of this sugar-like honey, and the five other sections were not capped over. A little in the cells was not solid.

I have never seen any thing like this before, and I believe the bees got it from cantaloup-blossoms.

as we raise a great many here. Some say this honey is better than that from clover. At any rate, I am sure it is not honey-dew. The cells that were not half full were just like those that were capped. What do you think is the cause, or where did the bees get it?

Ridgeway, N. C.

R. V. PASCHALL.

[Perhaps some of our readers who know the character of cantaloup honey can throw some light on this.—ED.]

Bees Clustered Out in Spite of Plenty of Room, Ventilation, and Shade.

Very often I read something to the effect that, in order to keep bees in the hive, we must provide plenty of room. My brood-chambers are all full of comb in which there is no honey, and the combs have been in this condition ever since early spring. The supers are empty, and yet my bees hang out all day and late at night. I have a 1½-in. entrance all around my hives, and shade over every colony. The colonies, however, are very strong, as I have not allowed any swarms because of the bad spring weather.

The bees started in this spring with plenty of honey, and very strong. I had 23 colonies, but now have only 9. It seems as though the bees did not work, for they simply stayed in the hives, ate up the honey, and then all but nine colonies died. The remaining nine have been working finely, but for themselves only, there being but a scant amount of honey in the hives now.

The bees are working all the time, as they bring in dark-brown pollen on their legs; still, there are a great many bees idle around the hives. It seems as though there were but few bees working.

We have plenty of white clover around here, and other flowers. I have sowed buckwheat for a late crop in order to give the bees enough honey for winter use. What is wrong?

Osawattomie, Kan.

W. E. STROUP.

Would Foul-broody Hive-bodies be Safe to Use after an Interval of Six Years? Variation in Color of Bees.

May hives in which colonies have died of foul brood be used again after having been out in the open air for five or six years?

I have been buying queens this summer, and the bees all seem to look a little different from each breeder, either a little lighter or darker. I always send for golden Italians; but I find that the drones are black, and the workers one, two, and three banded. What is the exact color of the different strains of Italians?

I have 63 colonies, most of which are hybrids, and I wish to requeen with the kind of Italians that suit me best. I like the yellowest the best now.

Long Pond, Pa.

MAHLON MOYER.

[There has been some discussion as to whether it pays to disinfect hives at all. Some inspectors claim to have no trouble where they disregard the hives, while others find that the disease returns. We have taken this position: That it means so little expense to scorch out the inside of the hives with a gasoline torch or with a heap of burning straw, that it is penny wise and pound foolish to neglect doing it. As to whether the hives would be safe after having stood out in the open for several years we can not say. If the covers have been removed during that time, so that the sun's rays had access to the inside, it might be that every thing would be safe; but it would take so little time to make sure that we would advise you to be on the safe side, and scorch the wood in the manner above stated.

Unfortunately, the bee-keeping world lacks a true standard of color to distinguish types of bees. By the term "golden" some bee-keepers mean extra yellow bees having the three characteristic bands; but most breeders mean five-banded bees when they refer to golden. There is an unfortunate confusion of terms, including golden-all-over, yellow-to-tip, five-banded, extra yellow, etc.

You can not tell very much concerning the purity of a queen by the color of the drones, for the color of drones varies considerably, even from a queen that is known to be pure. A great variation, however, in the color of the workers—that is, a variation of from one band to three bands—would in most cases indicate that the queen was not

purely bred or not purely mated. Of course, in any hive there are likely to be workers from some other hive that get in. For instance, if you have a queen of known purity in a yard where there are other colonies without pure queens you will be likely to find a few dark workers in this one hive containing the pure queen, for they get their entrances mixed up to some extent.

In the end you will probably find that the extra-yellow bees will not suit you as well as the darker Italians, for the four and five banded bees, being bred especially for color, are not as hardy, oftentimes, nor as gentle.—ED.]

That "Weeping Honey."

Some time last year we had some correspondence respecting "weeping honey." I am sending you by express six sections that were taken out of different hives yesterday, as sent away from here. The "weeping honey" only shows by the existence of the convex raised surfaces of the cells. There is none yet regularly weeping. We took out some 1000 sections yesterday, and had to discard some 50 more for this cause—not nearly as many as last year, when in some instances whole supers had nothing but "weeping honey." The month of July was very wet and hot. My hives on scales increased 55 lbs. in the last 16 days of June, and 4 lbs. only in July. Half of the sweet-clover crop was lost during the 12 days in August. The increase was 12 lbs. I have noticed, as below, the weeping honey shown on the six sections when leaving here.

Honey is mostly from sweet clover, and bees worked considerably on alfalfa for the first time that I have observed them for several years.

Allenville, Ala., Aug. 13.

H. F. HART.

[The honey came in such bad condition that we were unable to see just exactly how the samples looked before they were shipped; but from the general statement made in your letter, and from the tasting of the honey itself, we are of the opinion that the bees gather something that causes a slight ferment in the honey, for the honey itself seemed to be slightly acid. This ferment generates, probably, a little gas that causes the cappings to bulge, or causes the honey to become thin—so thin, indeed, that it will force itself through the cappings that are slightly porous.

You speak of wet hot weather. It is possible that it was so wet that all the honey could not ripen fast enough, and as a result some of it soured a little. So far from being an old honey, this is plainly a product just from the hive, and is only one of many other cases of a like nature where the honey seems to take on a sort of acid condition. The honey is not bad eating, but we would suppose it would not keep long, owing to the ferment.—ED.]

Alexander's Apiary of 730 Colonies Operated by Frank Alexander.

I have just returned from a trip, and called on Mr. Frank Alexander at Delanson. He is still running that big yard of 730 colonies. I had wondered what had become of it since his father died, and I presume many others have too. It is there the same as ever; but the very dry weather this year has cut the crop short. His brother, who runs a grocery there, said he thought he would have about twelve tons.

Rathbone, N. Y., Sept. 8.

LEROY LLOYD.

Two Queen-cells Contain the Only Eggs in a Hive.

I had a colony of bees without queen, brood, or eggs. I put in a queen-cell, and in a day or two I looked to see if it was all right, and found two other cells just started with an egg in each. They were the only eggs in the hive.

Union City, Mich., Aug. 23.

J. L. SWAN.

Dr. Miller's Opponent.

I have been much interested in the discussion between Mr. Metcalfe and Dr. Miller. I think the doctor has *met a calf* that is a hard hitter; and if he succeeds in taming him he will have to furnish some pretty good meal.

Lowell, Mich., Aug. 22.

C. H. WIGGINS.

Our Homes

By A. I. Root

Come with us, let us lay wait for blood, let us lurk privily for the innocent without cause; let us swallow them up alive as the grave; and whole, as those that go down into the pit; we shall find all precious substance, we shall fill our houses with spoil.—PROV. 1:11, 12, 13.

Almost ever since this department was started I have had more or less to say in regard to market gardening. I have had hundreds of letters from those who have been led to go into rural pursuits from the teachings of GLEANINGS; and it rejoices my heart to know that I have been able to lend a helping hand, as the years have gone by, to the honest hard-working people. In visiting their homes in my travels I have heard many stories of how they worked early and late to get a start. The successful gardener, especially near the large cities, is not only obliged to get up early in the morning, oftentimes before daylight, to get his stuff on the market at the proper time, but he is often obliged to work late at night; and where success has crowned his efforts, it almost invariably happens that the good wife has borne a large part and an important part of the burden. I fear some of these poor women have been overworked, and have gone down to early graves in their ambition to help the husband make a success of the work he loved. Let us now get down to the matters of to-day.

On the morning of Saturday, Aug. 27, a market-gardener near the city of Cleveland took in a load of produce, with his wife and little girl to help dispose of it. In order to clean up their product they stayed until it was well along in the night before they reached their home. When near Kamm's Corners, on the western outskirts of Cleveland, and not far from their own home, a couple of highwaymen attempted to hold the team just ahead of them. These bandits naturally conjectured that these gardeners going home from the market in Cleveland would have considerable money in their pockets. One of the highwaymen grabbed the horses by the bits, and the other pointed his gun at the driver and demanded his money. This shrewd, hard-working farmer, however, did not propose to give up his honest gains without a struggle. He gave his horses a cut, and they pulled away from the hands that held them; but the man with the gun shot at the driver in his attempt to stop him. The ball struck the wagon, but did no further harm. These two drunken boys, however (and they were only boys), decided to try to hold up the next team. This team was the one I have described, with the man and his wife and little girl. When they saw what had happened to the team just ahead of them he turned his horses quickly to drive back in the other direction. The boys, seeing this,

fired several shots at the team, but did not succeed in stopping it. They did succeed, however, in killing Mrs. Rayner, the driver's wife, one of the bullets piercing her heart. If I remember correctly the little girl was asleep in her lap, and this poor hard-working mother, who had a little family at home, and on whom so much depended for their care and well-being, was thrust out of the world because those two wretches in human form wanted the little money Mr. Rayner and his wife had worked and toiled for early and late. The girl was awakened by a bullet tearing through her foot. She screamed with pain, but the mother heard nothing, as she herself was dead.

As a natural consequence a great stir was made. The papers told us that the whole neighborhood by the hundreds, and I do not know but thousands, turned out to hunt up the perpetrators of that dastardly act. By the way, the highway hold-up business seems to be on the increase, not only in Cleveland but in the suburbs around that great city; and not only after night are men held up, but several times lately in broad daylight in the crowded streets of Cleveland. And even the boys have caught on to the trick of getting money without working for it. They borrow an old revolver, it does not matter whether it will shoot or not, then point it at some one and demand his money. What they do with the money when they succeed in getting it will come in a little further on in our story.

Notwithstanding the crowds that came out and scoured the neighborhood, it was over two weeks before one of the murderers was caught. See the following, which I clip from the *Cleveland Plain Dealer*:

START AS HIGHWAYMEN.

YOUNG MEN, ACCUSED OF SHOOTING DOWN FARMER'S WIFE, BUY REVOLVER, DRINK HEAVILY, AND THEN BEGIN CAREER OF CRIME, ASSERTS PRISONER—BURN BARN, STEAL HORSE, AND THEN SLAY AFTER MANY ATTEMPTS AT HIGHWAY ROBBERY, DECLARES YOUTH NOW IN CUSTODY.

William Van Gelder, 19-year-old youth, confessed murderer of Mrs. Walter Rayner, Rockport, was arrested early yesterday morning by Sheriff Hirs-tius and Detectives Madison and Rabshaw.

The capture, after weeks of work on the part of the officials in running down numerous clues, was made at the home of Samuel Duck, Richmond, O., a little town three miles north of Painesville.

You will see from the above that it must have cost quite a little sum of money to run down that boy. Here is another clipping that describes him:

Van Gelder, strong and manly, yet worn with the burden of his crime, told his story freely, willingly, relieved at his capture, which he had feared and yet longed for. It is the old story of a desire to emulate the bandit type of idleness, a couple of guns, and a few drinks. For two nights the career of attempted robbery and wanton shooting went on, terminating with the killing of Mrs. Rayner.

Notice what is said in the above about a couple of guns and a few drinks of whisky.

* * * the excitement over, the courage of the whisky gone, cold, trembling, and tired, he crawled into bed that night, ignorant of his crime.

The above gives us a clue to the whole business. The courage that this boy had to go into this terrible business came from *whisky*. Where did the boy of only 19 years get that whisky, not only in the day time but after dark and after *midnight*, in various places out in the country and in and around Cleveland?

Let us digress a little right here. Our own county (Medina) is dry, and it lies just south of Cuyahoga, where this murder was committed. If I am correctly informed, about 90 per cent of the 88 counties in our State are dry; but notwithstanding our dry counties, our Medina officers are kept busy, and there is somebody in jail here a greater part of the time, just because there is a wide-open saloon (wide open day and night) a little to the north of us on our electric railway. It is located just out of the incorporation of the town of Berea—a pleasant village celebrated the country over as the seat of two great Methodist colleges, Baldwin University and German Wallace College. The village itself is strictly dry, but this one saloon just outside the corporation keeps Medina and Berea both busy in taking care of the criminals that radiate constantly from that saloon. (It makes me think of the shooting stars that are constantly emanating from the little speck of radium I have in my possession.) This young Van Gelder, when he was deprived of the stimulus of whisky, had a *conscience* after all. He confessed fully, and was glad, so it seems, to *make* a confession. As there are some morals scattered all through this confession I have decided to copy it entire.

"Friday, Aug. 26, the first night we were out, Pender and I came into town and bought two guns at a pawnshop on Ontario St.," said Van Gelder. "For one we paid \$2.00 and for another Pender put up his watch and another \$1.00. From there we went out to Rockport, and in front of the schoolhouse—it was dark by that time—we met a farmer and fired two shots at him. He was going toward town and whipped up his horses and got away. At Columbia station shortly after, we met another and shot at him. One of the shots went through his stiff hat, but he drove on and escaped.

"A little later we went up to Harrington Road and met a man that I now think was Ellis Harrington. We saw him coming near his home and then decided not to hold him up, but waited until he was unhitching his horses, and then Pender asked him if we could sleep in his barn. He told us that we could not, and ordered us off. We went up the road a way, and Pender said that we would get him.

"After he had unhitched we went back to his barn, hitched a horse into a rig and tied the other horse in a shed. Then I drove to the road and pretty soon Pender came out and without a word we started to drive away. After a while Pender looked back and said:

"Do you see that light?"

I looked back and said that I did.

"That fellow will have to work. I set his barn afire," said Pender, and we both laughed. Then we drove to the corner of Highland Av. and Madison Av., where we left the horse and buggy. We then went home and it was about 4 A. M.

"Saturday night, the night of the killing of Mrs. Rayner, Pender came to my house. I got shaved and we started out once more for Rockport.

"I know a fellow who has lots of money, and it's easy to get," Pender told me. He meant a Mr. Collbrunn. On the way out, we stopped at Kundtz's saloon and got a drink. Then we went west to the Rockport club, and tried to steal a rig out of a stable shed, but we were frightened away by some one who heard us. Then we went back to the car barns

and got a drink at Wyatt's saloon on the way, and then turned back east toward the tracks.

"We saw a fellow coming, and started to hold him up, but we concluded that he had a gun, and so we didn't try it, but walked on back toward Darmstatter's saloon, where we sat for a while on the watering-trough and then we walked east. It was then that we heard the rumble of the big covered market wagons returning from Cleveland. We waited at the side of the road until the first one, Dunford's, came along.

"When he got opposite us, Pender grabbed the horse by the head and I pointed my gun at the driver and told him to give up his money. But he whipped up his horse, and broke away from Pender. I fired, and the shot tore through the side of the wagon.

"About 100 feet back came a second wagon, Rayner's. He had heard the shooting and was trying to turn his horse back east. But we both ran out into the road, and started shooting at him. We didn't tell him to stop, or give up his money—we just started shooting. I don't know why, only we had been drinking all night, and I guess we didn't know what we were doing.

"We fired two or three shots and then started to run over through the race-track. As we stumbled along Pender asked me if I heard that groan. I told him that I did not. We did not know then that any one had been killed.

"We ran through the race track, over to Riverside Av., and there Pender went into a barn belonging, I think, to a man named Christianson, and hitched up a horse. Then we drove through the fields and over some roads to Lorain Av.

"As we came out Lorain Av. we met a man whom I now think was Charles Harrington. We stopped and talked with him. Pender was nudging me all the while to hold him up, but I was cold and chilled and sick with the whisky and I didn't. We both started on, and before we had gone more than a few feet Pender wanted to go back and get him. 'He may have half a dollar,' he told me.

"We did start back, but Harrington was out of sight."

Harrington saw them coming toward him and hid in the bushes by the roadside.

"We then drove back to Kundtz's saloon and had a drink. It was then 2:15. I stayed in the buggy and Pender brought me my drink. There was another rig standing there and we talked of waiting until its owner came out, and holding him up, but we decided not to. Then we took the rig down to Minut's barn, where it was found."

In reading the above, one asks how it is possible for those two boys, in their *right minds*, to go ahead in that way and hope to escape. My answer is, they were *not* in their right minds. They were made crazy and kept crazy by getting drunk in saloons that are scattered all along the line of the electric railway between Cleveland and Kamm's Corners, near where the murder occurred. When they asked Mr. Harrington if they might sleep in his barn, and were refused, out of revenge Pender set the barn on fire. This unreasonable and *posterous* anger was instigated by *whisky*. It is a fair sample of a drunken man's way of reasoning. When they saw what was done they both laughed—another example of a drunken man's—not "brute sense," but lack of *all* sense.

Please note the names of the different saloon-keepers in the confession, and where these men got whisky at any time, day or night, when they happened to call for it. These hot-beds of crime are mostly started and kept going by some foreigner who is too ignorant to understand the mischief he is doing our country and our nation, even if somebody should try to explain it to him. Please consider that this man Rayner was a law-abiding citizen. He had done no-



FILLING UP THE RANKS AS THE VETERANS DROP OUT.

—Courtesy of "The Friend."

thing to provoke those drunken men. The boy says, by way of apology, that they had been drinking all night, and did not *know* what they were doing. Please note the all-night part of it. They not only held up honest and innocent people, but helped themselves to rigs wherever they happened to be. Imagine a busy market-gardener going for his horse and buggy and finding that some drunken man has appropriated it! Now, then, what shall be done with these highway robbers and murderers? If this thing is allowed to keep on, people will be afraid to go out on the streets after nightfall.

Just one more clipping from the *Plain Dealer*:

The Ohio law provides that whoever kills while attempting robbery shall be guilty of first-degree murder. It is thought that, in view of Van Gelder's youth, it may be hard to send him to the chair.

From the above it would seem as though the boy and the man with him are candidates for the electric chair; and it may be true that the electric chair will help to save life and give a feeling of security in the future to busy people who really must be not only up early in the morning but late at night; but how about those *saloons* named in the above clipping? Shall they be allowed to go on with this terrible business day and night? Are *they* in any way responsible for the increasing number of hold-ups? Suppose the crowd that collected could have caught hold of the murderers at the time Mrs. Rayner was killed. God forbid that the *lynching* business should be on the increase as well as the *highway-murder* business. Now suppose that the crowd had decided, or some able speaker

had been able to explain to them, that the *saloons* were as much responsible, if not more so, than that boy only 19 years old; and suppose, after this crowd of people (it might have been a hundred, or may be several hundred) had gone to that nearby saloon-keeper and notified him that *he* was also responsible for that woman's death—suppose this whole crowd, laborers and land-owners, had demanded that he quit his business then and there, would he not have done it? I think he would. More than twenty years ago, Rev. C. J. Ryder said in one of his sermons here that if the business men who sat before him would *demand* that the saloon across the alley from the church should quit business it would wind it up. I think I gave voice to the loudest "amen" I ever uttered in any church, when our pastor made that statement; and as the saloons quit business a very short time afterward, somebody suggested that my amen helped to break up and banish the saloons from our town, from that time to this. How does it come, friends, that in this "home of the free and the land of the brave" so many people sit still and let this terrible traffic go on? We are making great progress in combating "preventable diseases;" we are looking after the babies as we never did before; we are even making deep studies of the matter of looking after the health and happiness (I guess that is the right word) of our pigs and chickens; but may God forgive us (and if we go right at it I think he *will* forgive us) for letting these hot-beds of crime continue to grow and flourish right next door to honest and hard-working people.

I have copied a picture from a periodical

called *The Friend*. Just look at the procession, and all marching down to a drunkard's grave. I hardly need tell how this has been going on for ages past, and the responsibility rests on us, *on you and me*, for letting it keep on. As the men in the ranks drop out, somebody must fill their place; and the saloon-keeper makes it *his* business to fill up vacancies. If grown-up men deliberately and of their own accord step into the ranks, it would not be so hard; but just think of taking some innocent boy—a boy for whom his mother is, perhaps, working and praying even now—taking this bright, innocent, unsuspecting youth and *thrusting* him in among that crowd just for a few nickels. May God help us. We are making some counties dry, and the thing is narrowed down until now the counties containing great cities are asking, "Shall liquor rule?" or, as I said before in our previous issue, "Shall *rebels* rule?"

I wish to quote here a few lines from William Jennings Bryan:

A FEW QUESTIONS.

Question.—The money invested in breweries, distilleries, and saloons in Nebraska is small compared with the money invested in farming, manufacturing, and merchandising. Why is money invested in the liquor business so much more potent in politics than money invested in other forms of property?

Answer.—Because money invested in breweries, distilleries, and saloons is used as a club to beat any one who opposes the demands of the liquor interests, while the owners of other forms of property allow themselves to be terrorized.

Question.—Why do those connected with the liquor-traffic exert more influence in politics than educators?

Answer.—Because the nation spends four times as much for drink as it does on education.

May God be praised that Mr. Bryan has finally broken away from the political gang that has heretofore kept him from speaking out his honest sentiments; and may all good men and women rally around him and hold up his hands.

Yet one more clipping, in closing, from the *Plain Dealer*:

WOULD BAR SALOON BANKS

COLLINWOOD RESIDENTS INDIGNANT OVER PRACTICE OF CASHING PAY CHECKS IN RUM-SHOPS.

Collinwood citizens are indignant at the wholesale practice of cashing checks that is going on in the saloons as soon as Lake Shore railroad employees are paid off. It is said that the saloon-keepers are reaping a harvest by the business.

"This business ought to be stopped at once," said Rev. M. L. Buckley, pastor of the Church of Christ. "I understand that soon after pay day certain saloons cash checks to the amount of \$40,000; a good amount of this is, undoubtedly, returned to the bar-keepers for beer and whisky. Of late the saloon men have been running things with altogether too high a hand."

The wave of indignation against the distributors of rum was precipitated by the robbery Wednesday in Zimmerman's saloon, Collinwood, when \$1800 was stolen from the place. The loot was money which was on hand to cash the railroad men's pay checks.

Please notice this \$1800 was money to pay railroad men, who certainly earn their money if anybody does. The robbery was *in a saloon*, of course. Does not our text describe those engaged in the traffic?

THE WRIGHT BROTHERS' UP-TO-DATE FLYING-MACHINE; SEE PAGE 628.

*Up above the world so high,
Like a diamond in the sky.*

In writing up my visit to the Wright brothers, p. 602, last issue, I said I hoped to give our readers a good picture of it soon; and through the kindness of Miss Catherine Wright, sister of Orville and Wilbur Wright, I received a very good picture of the machine I tried to describe in our last issue; and I tell you it is an imposing spectacle, even when it stands out on the grassy field, *ready to fly*. In steering an automobile the operator has only to swing it to the left or right; but after the flying-machine leaves the earth, it has to be steered in a like manner up and down. Just in front of the machine you see a pair of cloth planes, something like the large machine itself, except that they can be turned up or down with a lever. At the rear of the machine there are two similar planes of cloth, but they stand up and down vertically, as you see; and these can be revolved so as to make the machine turn either to the right or to the left. While the students were making their experiments during my visit they swung around in a very large circle, as there was quite a brisk wind. But Orville explained to me that, when there was a little wind, or almost a dead calm, an expert aviator could tip the machine up almost edgewise, and swing around in a circle so small that it was almost like turning on one's heel. The skill to perform this feat, however, comes only with long practice. I noticed that, at the recent meet in Boston, some of the pupils were swinging their machines around on so short a curve that Wilbur Wright interfered, and forbade their taking any more such risks. Now, with this preface I wish to copy from a new periodical for owners of automobiles, called *The Lever*. You can get a sample copy by addressing The Lever Publishing Co., 141 West Ohio St., Chicago, Ill.* The following extract is from a statement made by Arthur L. Welsh, entitled "How it Feels to Fly."

Welsh had read many books on aviation, yet he had never touched an aeroplane previous to last March. He wished to buy one, so he saw the Wright brothers. It was his intention to tour the country at county fairs with his aeroplane, but a bigger opening came his way. He found that Wright brothers were delivering no machines until 1911, but that there was a chance to get on their staff as an aviator. Welsh applied and was accepted. He is 29 years old, next to the youngest aviator in this country, the youngest being a man of 21 years. His home is in Washington, and he has made some of the highest flights on record.

"It took me," said Welsh, "just about four hours

*Perhaps I might mention the fact that one of my grandsons, Howard Calvert, a boy of 19, when he first saw a copy of *The Lever* spoken of above, hurried off a dollar for the journal for one year. Then he desired his grandfather to make application to the Wright brothers for a place among their pupils to learn to run a flying-machine as well as an automobile. And, by the way, I might add that Howard is already quite an expert with all sorts of automobiles and motor cycles. Whenever his grandfather has "got stuck," Howard has been pretty sure to get him out of his trouble in a very short time. I am glad to add that the boy has just begun a course at Oberlin College.

and a half of actual flying to learn the trick. This time was spread over a period of six weeks, more or less, for Mr. Wright never takes his students out in a machine unless there is a perfect calm, and for this we often have to wait weeks at a time. I had never flown before. I had no shop training, yet the game attracted me.

"First, Mr. Wright put me in the passenger seat, and we took a trip, merely an exhibition. I was simply a passenger. The second flight he gave me charge of the front control, which regulates the up-and-down movements of the aeroplane. This was the first practical work I had done. It was easy to learn, and after the fourth trip I was given charge of the lateral balance lever, which is in two parts. One part regulates the angle of the planes and the other the rear rudders, which enable the aeroplane to make curves and circles. After a few trips in which my whole attention was devoted to using this lever, I was given charge of both together, and controlled all the movements of the machine.

"At no stage of the game was I frightened. I guess I didn't expect to be—at least, the moment we rose in the air on our first trip I experienced a strange feeling of security that can be understood only by actually experiencing it. The rush of the machine, the whistling of the air about me, and the terrific speed wedged me back into my seat, and I lost all ambition to hold tight to something. Falling is probably what most people fear. Height seemed to cut no figure in my feelings, for I was firm in my seat, and soon all consciousness of the idea that I might be thrown out and go tumbling to the earth below disappeared.

"One peculiar thing about flying is the after-effects of the roaring of the motor. With open ports the shots are fast and furious, and the roar is deafening. Sometimes, just after a flight, it takes me several minutes to shake off the feeling of deafness, of ear pressure, caused by the roaring motors. But I've come to love that roar. It's like a human heart-beat. You miss it when it's gone.

"Up in the air I have practically no idea of how high I am. Of course I can guess, but the landscape is so varying and so deceiving that it is almost impossible to tell anywhere accurately. The time I care most about is the critical moment when the machine speeds up toward a flying clip and the rise is about to begin. It keeps me busy for a moment or two with the levers, then I shoot up, up, up, until I am clear of the earth. The tension caused by the anxieties of the get-away breaks, and I feel like cutting figure eights and doing other stunts. It's the get-away—that twenty feet just above the ground that's full of worries. I tell you, it's a relief to feel that you've made it all right.

"Speed? I never can tell—except by the hum of that cracking motor. When I am well up in the sky it often seems as if I were hardly moving. I can feel the rush of the wind as it whips about my face, and the suction of the huge propellers as they race around behind me. As for the feeling—every one will have a different sensation, I suppose. For myself, I never want to come down. When I start at early sunset I like to fly until dark. Of course, it is business with me; but then, there is nothing that can touch the pleasure of it. And this is not merely because there is an element of risk connected with it. The feeling is intangible. I'm not a writing man, and I don't know how to describe it—but it's great!

"There is one thing that I never forget, however. That is the simplest thing about the machine, and at the same time one of the most important of the parts of the aeroplane. On one of the cross-bars some few feet ahead of me is tacked a tiny wisp of a rag, light enough to let the breeze blow it about. That is my trouble-indicator. When I am making a big circle there is a certain angle at which that rag should straighten out. If it takes another angle than the one it should, I know I am drifting—which way, the rag shows. You may be sure that my eyes keep that bit of soiled cloth well covered at the critical moment.

"The sensation? Try it! You'll never know until you do."

**FLYING-MACHINES IN FRANCE UP-TO-DATE;
1000 SOLD ALREADY, AND ANOTHER 1000
TO BE DELIVERED BEFORE THE END OF
1910.**

We clip the following from the *Journal of Agriculture* for Sept. 22:

Next year French aeroplane manufacturers expect to sell 11,000 machines. More than 1000 aeroplanes have been sold in France since the first of the year, and another 1000 will be turned out and delivered before the end of the year. Three hundred Bleriot monoplanes and 200 Farnam biplanes have been sold this year, these two types being the most popular.

SOUTHWEST FLORIDA; MORE ABOUT THE DISCOURAGING THINGS, ETC.

The letter below comes from an Ohio bee-keeper who has been in Manatee Co. for about a year. My impression is that he has not met with the success that he expected, and I do not know but he is a trifle homesick. I think, however, that what he says is mostly true. I can not agree, however, that it is a bad place to earn money. If I am correct, carpenters are getting \$4.00 a day, working eight hours; and some of these carpenters are not first-class, either, as I happen to know. Now, I did not mean to find any fault; but the above may sound a little like it; but I offer it as an illustration. But let us read the letter:

Mr. A. I. Root:—Your description of Florida in your writings, I am afraid, is altogether too flowery, and its disagreeable side is made too tame, which may induce many Northern people to come here who would do better to stay where they are. About the only disagreeable thing you seem to see is the redbugs, and they are pretty bad, sure enough. Mosquitoes are also bad, and have troubled us since you left for Ohio, although just now they are not troubling us much. Since the rainy season seems to be about over they have left.

The worst feature about this section is, to my mind, the slim chances a man has for making any money. What I have seen leads me to believe Florida is a grand place to *spend* money, but an awful poor one to *earn* it. Take the truck-growers about here, for instance. Very few of them got any thing out of their crops last season. Many of them, as you probably know, came out away behind—thousands of dollars in some instances—and year before last was said to be no better. This is making hard times, for money is scarce. Bradentown is as dull as can be, and no building of any account is going on, nor has been in the past year.

The trend of your writings is altogether too rosy. Wouldn't it be better to give the public a little more of the dark side? Don't tell them of the fine hard and oiled roads all about Bradentown, when the fact is there is only *one* hard road, which is Manatee Ave., leading from Manatee to Forgartyville. All others drop you into sand except the woods just a little way out of town.

My business of bee-keeping has taken me over the country on both sides of the river some 15 to 20 miles; and although having traveled over much of this country from Massachusetts to California, Washington and Oregon, etc., I must say that, for downright barrenness, I have not seen any country like this. Yes, tell the good people of Ohio and elsewhere that Florida has a 98 per cent climate; but where one has to pay out more for fertilizer per acre than it would take to buy a good improved farm up there, what's the use of trying their fortunes here? I remember along about 1895 a colony was started at Green Cove Springs, through the influence of the *Farm, Field, and Fireside*, of Chicago. Quite a little settlement was started about three miles from the town. I happened to land there in the winters of 1896 and 1897, and stayed there most of the two winters. Well, it didn't take long for those Northern people to starve out, and I don't think there are more than two or three families left now. All had to go back to make a living.

The land about here is somewhat richer than about Green Cove Springs; but freight and commission charges in most cases eat up all the profits, and leave the grower worse off than when he started in.

I have written of a few drawbacks only. There are many more I could tell about—the land sharks,

barrenness of our markets in summer, the poor fruits, etc., but will forbear at this time.
Bradentown, Fla., Sept. 16. E. M. GRAVES.

After reading this a suggestion comes to my mind, and it will apply to many people besides friend G. For instance, somebody from the North comes down here, and when he has bought his milk at 10 cts. a quart, eggs at 40 cts. a dozen, strawberries at 30 cts. a quart, etc., he is inclined to think the price is *awful*; but I say to him, "My good friend, if you think the prices are awful, why not turn around and be a *producer* instead of a consumer only?" I tell you, that makes things look different. Now, I know by experience that you can produce eggs and milk and strawberries in Florida, and do well, if you are not afraid of good hard healthy work. Some of my friends have suggested that I would be happy, no matter where you put me. That may be true; but one comforting thing about it is, no matter where I go I find more or less good people who are *just like me* in that respect.

ELECTROPOISE, OXYDONOR, OXYGENATOR, ETC.

Dear Sir:—I saw in GLEANINGS a piece about Oxydonor. I have in my home at present an Oxygenator that is claimed to cure all diseases. I got it to cure rheumatism. The price is \$35.00, and I should like to know if this is the same thing that your paper says is a humbug. If you know any thing about this I should be pleased to know.

Apple Creek, O., Sept. 22.

OTTO SAURER.

The letter above explains itself.

My good friend, the picture on the circular you send us illustrates the old Oxydonor exactly; and it will do you just as much good as a horseshoe nailed over the door to keep off witches. It has exactly as much strength and science about it as a horseshoe. If you think I am pretty severe on these rascals who claim they have invented something, listen to the following:

Dr. Kellogg, of the Battle Creek Sanitarium, helped years ago to expose this scheme of robbing sick people. While I was on a visit to Battle Creek he gave me the following:

A wealthy man in their neighborhood built a very fine residence. In order to have it fully equipped he bought a \$50.00 Electro-poise or Oxydonor—I do not remember which name he applied to the machine; but that does not matter; but he paid \$50.00 for the outfit. It was recommended to take the place of the family physician. This \$50.00 machine was something like a large clock. In place of figures on the dial there were the names of various diseases; and you could turn the hand on the dial so as to stand over any one of these maladies. Well, when this rich man was exhibiting his great scientific invention for curing people, Dr. Kellogg asked him what sort of complicated machinery inside performed these wondrous cures. The owner said he had never seen the inside, but felt quite sure that it was some new piece of complicated mechanism. The doctor proposed that they get into it and see. Now, the manufacturers evidently did not mean to facilitate any prying

curiosity; but with the aid of some tools they opened it so they could see inside. What do you suppose they found? Just this: The wire that was attached to the patient's ankle was simply twisted around a nail on the inside of the machine; nothing more. When the owner saw it he called one of his hired men and had the \$50.00 apparatus taken down and thrown out on the woodpile. The thing that these fellows put in a dish of ice-water, with a wire hitched to the ankle, was on the same principle as the above. It is made to work on the credulity and imagination. It does just that and nothing more; and the price is, in the case just now before us, \$35.00.

THE VIOLATION OF LAW AT NEWARK, O.,
AND WHAT THE GRAND JURY THINKS
OF IT.

We clip the following from the St. Louis *Star Farmer*:

Former Sheriff William Linke, of Licking County; former Mayor Herbert Atherton, of Newark, and former Chief of Police Robert Zergabel, are held to blame for the lynching. They could have prevented it, in the opinion of the grand jury, had they lived up to their official duty. The sheriff is said to have cowardly deserted his post, the mayor to have gone to bed at home, and the chief to have gone to a near-by saloon to play cards.

Responsibility is also lodged with the people, for the report says had they elected competent officials the lynching would not have taken place.

Think of it, friends—the chief of the police of a great city playing cards in a near-by saloon when officers of the law were being lynched for trying to do what he should have done. Who is to blame for putting such men in office? Are the officers of the law in *your* town or city in the habit of frequenting saloons? If so, wake up before you have a repetition of the Newark tragedy.

"I DO NOT DRINK."

May the Lord be praised for the following, which we clip from a recent issue of the *Union Signal*:

He who drinks is deliberately disqualifying himself for advancement. Personally, I refuse to take such a risk. I do not drink. WILLIAM H. TAFT,
President of the United States.

If the man who occupies the highest office that this nation can give to any man has the courage to come out before the world and say "I do not drink," what should prevent every youth in our land, who has any ambition to be great and good, from following his example, and saying, both in public and private, "I do not drink"?

I copy the following from the *Southwest Anti-saloon Issue*, of Albuquerque, N. M.; and if President Taft has committed himself as below I shall have to beg his pardon, and at the same time I should be glad to have somebody tell me *when* and *where* he said it.

The ideal state, and that which we should work for, is, unquestionably, prohibition.—W. H. TAFT.

May the Lord be praised for a President who is not afraid to stand up for righteousness and against iniquity.